Striking Gold: Teamwork, Luck and Technology

Education Session
Outlines
Sovereign Hill Education Service session: Striking Gold

Session title: Gold Fever  Year 3 – 6
Can you really make your own luck?

Theme: Why was gold fever so contagious and addictive, and why were thousands of people lured to the hardships, triumphs and injustices of goldfields life?

Session objectives:
Students will be able to:
- Understand why the term ‘Gold Fever’ was coined.
- Identify and empathise with the diggers’ lifestyles, difficulties and how various cultures mixed.
- Use team skills and strategies to complete a group task.
- Practise mathematical skills within the goldfields economy.

Session description:
After learning the rules of the Gold Fever game, students form groups and become gold buyers, bankers, troopers, sailors, families, Irish, Italians, Chinese, Cornish, French, Germans and Californians. They choose the equipment they’ll need on the One Eye Gully diggings, and are given money to start them on their way. The ‘goldrush’ begins in One Eye Gully as groups select a claim, buy licences, search for gold and sell it to the bankers. Meanwhile, troopers enforce the law, write out licences, check claims and keep the peace. Bankers set up shop and weigh ‘gold’, take a transaction fee and pay the diggers. At the end of the game each group’s money is counted, and students discuss their experiences. Who won? Was it fair? Who went to jail? Why? How did they feel? What parts of the game became real?

Session locations and resources:
Carver and Dalton Auction Room and Assay Room (Education Centre), One Eye Gully, wheel barrows, bags, digging equipment, pans, scales, ball bearings for gold, shovels, coloured neckerchiefs and hats to identify each group. Students become engrossed in the goldrush as they:
- Role-play characters such as diggers, troopers and bankers.
- Rely on teamwork, but develop competitiveness between teams.
- Enjoy a highly kinaesthetic session, with lots of digging.
- Take ownership over their claim, gold and money.
- Experience the contagious nature of gold fever.

Classroom resources:
1. Sovereign Hill Currency Conversion Sheet
2. Research notes from Sovereign Hill’s website: Golden Literature Quotes from the Goldfields; Life on the Goldfields; Law and Order on the Goldfields.
3. Useful internet sites: Gold 150; State Library of Victoria; SBS Gold.

VELS Interpersonal Development: Working in Teams, Level 4
“Work effectively in different teams and take on a variety of roles of varying length and complexity. Work cooperatively to allocate tasks and develop timelines. They accept responsibility for roles and tasks.”

History: Historical Understandings Level 4
“Demonstrate their knowledge and understanding of significant events in Australian history including …1850s goldrushes.”
Other domains: Economics, Maths, Thinking Processes.
Sovereign Hill Education Service session: Striking Gold

Session Title: Finding Gold !

Was gold discovery sheer luck or a skill?

Theme: A kinaesthetic session where students learn about the properties of gold, how to find it and how to separate it.

Session objectives:
Students will be able to:
• Identify the unique properties of gold.
• Experiment with different tools and techniques to find it.
• Understand the separation techniques used to extract gold.

Session description:
Which of these three pieces of gold are real – if any? And how would you find it? Students quickly learn to identify the properties of gold, then compare the three types of goldmining and the different separation techniques used. They look at mining tools such as cradles and sieves, and are shown how to pan and separate gold. They form three groups, each electing a leader and timekeeper, then take a pan, plus a cradle, sieve or sluice as the tool they’ll test. First, it’s ‘washing time’, as students practise their techniques in troughs with a ball bearing and dirt. Then the race is on, as they head to the Diggings and use their tools to see how quickly they can recover 10 ball bearings seeded in dirt. The team leader keeps count of the ball bearings and timings. Finally, it’s time for the real thing, as students separate gold from seeded dirt in their pans. So: which was the best tool to use, and what were the problems with each separation process? Students discuss these issues back in the classroom at Sovereign Hill.

Session locations and resources:
Carver and Dalton Auction Room, the Diggings, troughs, pans, cradles and gold. In this hands-on session students will:
• Experience first-hand the problems of finding gold.
• Analyse the effectiveness of traditional diggers’ tools.
• Compare the different techniques to separate gold.

Classroom resources:
2. Research notes from Sovereign Hill’s website: Gold, Gold Properties and Uses; Mining Technology.
3. Useful internet sites: Geoscience Australia; SBS Gold.

VELS

Science: Science at Work, Level 4
“Students analyse a range of science related local issues and describe the relevance of science to their own and other people’s lives.”

Science: Science at Work, Level 5
"Demonstrate safe, technical uses of a range of instruments and chemicals, and of procedures for preparation and separation. Justify their choice of instruments and accuracy of measurements, commenting on the reliability of the procedures and measurements used, and the conclusions drawn against the prediction or the hypothesis investigated.”

Other domains: Interpersonal Development, Thinking Processes.
**Sovereign Hill Education Service session: Striking Gold**

**Session title:** Model Making: Goldfields Technology  
**Years:** 4-8  
*Use your ingenuity in the pursuit of gold!*

**Theme:** How can you use your ingenuity and produce simple machines to solve common goldmining and living problems of the 1850s?

**Session objectives:**  
Students will be able to:  
- Work in groups and use team-building skills to complete a project.  
- Observe working systems in the Diggings area and agree on a new system to solve a particular problem.  
- Plan and construct their system, explain its components and operation, and report on its performance.  
- Know how to safely use hot glue guns and handsaws.

**Session description:**  
In the 1850s goldrush days, tools, systems and processes were very basic. Miners had to use their ingenuity to survive – and so do students! They become Sovereign Hill diggers, working in groups to identify a problem in mining alluvial gold in the 1850s. They design solutions, visit the Diggings to investigate machines and systems that were actually used. Back in the classroom, students discuss the materials the Diggers used and what could be substituted for them today. Health and safety precautions must be followed as students construct models from modern materials, showing their understanding of the design problem. Finally, each group explains their system, how it works and why it is a workable solution.

**Session locations and resources:**  
Technology room (Explosives Store), Education Centre, Diggings area, huts, windlass, windsail and Californian pump. A hands-on, challenging session where students:  
- Work in groups to problem-solve.  
- Develop their skills in sketching, measuring and building.  
- Use wood, hot glue guns, saws and other tools.  

**Classroom resources:**  
1. Research notes from Sovereign Hill’s website: Mining Technology; Drawings section. Goldfields Technology Kit (for sale). ‘Constructing the Past’ sample unit  
2. Useful internet sites: Geoscience Australia; SBS Gold.

**VELS**  
**Design, Creativity and Technology: Level 4**  
*Investigating and Designing.*  
“Students contribute to the development of design briefs that include some limitations and specifications … They generate and communicate alternative design ideas in response to a design brief and use words, labelled sketches and models …”  
*Producing.*  
“Students use their production plan and select and work safely with a variety of materials/ingredients…to produce functional products and/or systems.”  
*Analysing and evaluating.*  
“Students reflect on their designs … and use evaluation criteria … to justify their design choices.”

**Other domains:** Interpersonal Development, Economics, History, Thinking Processes.
Sovereign Hill Education Service session: Finding Gold

Session Title: Steaming Ahead! Years 3-8.
A high-energy session looking at different forms of power.

Theme: All energy originates from the sun, but man-power and steam-power played essential roles on the goldfields.

Session objectives:
Students will be able to:
- Understand that all energy is derived from the sun.
- Understand 19th century power sources, including man-power, steam-power and horse-power.
- Identify the basic components of a steam engine and how it functions.

Session description:
How do diets affect energy levels and health? Two students dress as Western miner and a Chinese miner, and the group discusses the differences in their diets and how they get energy through food. The origin of all this energy is the sun – but how is it transferred between organisms? Students begin to find answers as they look at the miners’ jobs, their sources of energy and what they transfer that energy to, including 1850s tools at Mary Bath hut and on the Diggings. Students progress to steam power, discussing changes from alluvial mining to deep lead mining and the challenges faced in getting water and soil out of mines – and gold out of rocks. A Hero steam engine is demonstrated, then it’s off to the noise and excitement of Sovereign Hill’s steam operations and battery. How do fire, water and pistons work together to crush rocks to produce gold? What are the advantages and disadvantages of steam power, and how is it used today?

Session locations and resources:
Education Centre (Technology Room), Mary Bath hut, Chilean mill and windlass, steam operations and battery. Students look at sources and uses of power, including:
- Diet and energy intake.
- How tools and machines derive and transfer energy.
- Racing cans in water, to understand the concept of pressure in power.
- The mechanics of steam operations.

Classroom resources:
1. Research notes from Sovereign Hill’s website: Chinese; Mining Technology.
2. Useful internet sites: SBS Gold.

VELS
Science: Science Knowledge and Understanding,
Level 4: “They identify the characteristics of physical and chemical changes. They describe how substances change during reactions … Students use everyday examples to illustrate the transforming and transferring of energy.”
Level 5: “Use everyday examples of machines, tools and appliances to show how the thermodynamic model describes energy, change, force and motion”
Science at Work, Level 4
“Students analyse a range of science related local issues and describe the relevance of science to their own and other people’s lives.”

Other domains: Health and PE, Personal learning, English, Geography, History.