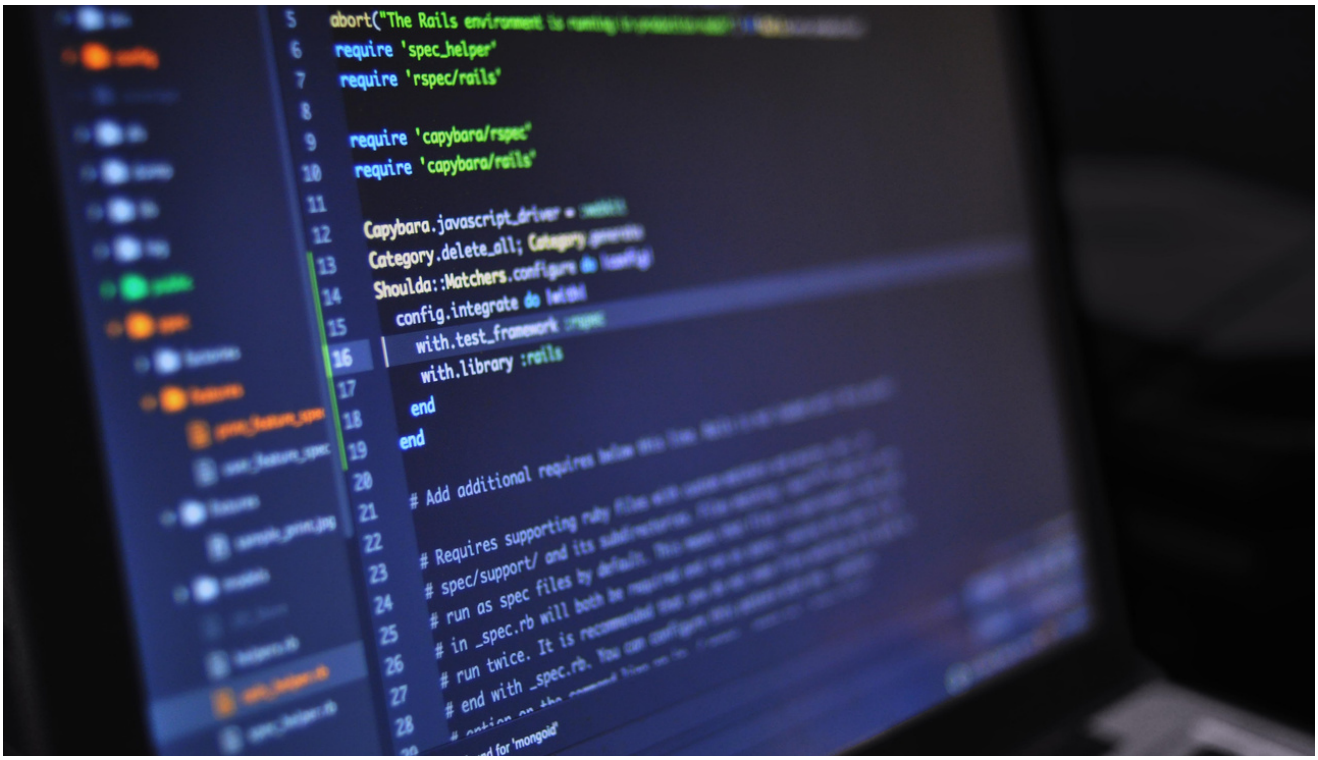

Virtual Work Experience:
Software Engineer

Micro Unit Outline

- **Relates to:** I.T/Computer Science; digital literacy and online safety; career exploration; work experience

Date		**Room**	
Period		**Class**	

Equipment and resources
Each student requires a computer/device with good internet access and earphones.

Accomodations and adjustments

Virtual Work Experience:
Software Engineer

Years: 7-12 **Duration: 2-5 lessons**

Introduction:

- Transform the Year13 X CommBank Software Engineer Virtual Work Experience from an individual student experience to a teacher-led class learning activity.
- Students gain insight into the world of software engineering and earn a certificate for their portfolio.
- The Virtual Work Experience (VWE) will span several lessons depending on the length of your classes.
- Students must mark all activities as complete and finish the survey to earn their certificate.

Learning Intentions:

- Explore the career of a software engineer.
- Identify key skills and pathways in software engineering.
- Apply software engineering concepts to practical scenarios.

Enterprise Skills:

- Creativity
- Digital literacy
- Problem solving
- Communication, collaboration and teamwork (if creating games in teams)

Student Success Criteria:

- ✓ I can explain what software engineer is and what one does.
- ✓ I actively engage in the VWE activities to demonstrate my enterprise skills.
- ✓ I reflect on my learning experience and save my certificate to my profile.

Software Engineer

Lesson Activity	Teacher Instruction
Introduction 15 min	**Ask** Note responses on the board. Add new insights as the answers are revealed throughout the VWE. Reflect upon the questions at the end to measure how students' understanding has deepened. Activate students' prior knowledge by asking: • **What is 'software engineering' and why is it important?** • **What does a software engineer do and where might they work?** • **What interests and skills do they need?** **Read and Watch (4 min video)** Read the Software Engineer Virtual Work Experience Overview with the class. Ask students to identify answers to these questions as you watch the video together: 1. **What was Jasmina's pathway to her current role?** Started biomedical engineering -> enjoyed coding -> transferred to software engineering -> various internships -> CommBank Graduate Program. 2. **What are the two main pathways she identifies?** Bachelor's degree in software or data engineering or a short 3-6 month bootcamp or certification. 3. **How did she find her internships?** Used her careers hub and careers counsellors; online resources like LinkedIn, Seek, and Indeed. 4. **What are the important skills she identifies?** To be able to articulate what you have done to people without technical backgrounds; coding skills. 5. **What advice does she give to 17-year-olds interested in engineering?** Be curious; there are a lot of online resources to help you; collaborate with a team.

A Day in the Life 15 mins	**Read** Read the day in the life of a Software Engineer information with the class so they understand the key terms. **Watch (3 min video)** Watch the day in the life video with the class.
Pathways 5-10 mins	**View pathways map** **Ask students to explain their understanding of:** 1. The equivalent senior subjects for your state (map suggestions are for HSC). 2. **Bootcamp:** intensive short courses to learn practical skills. Not always accredited but may be industry recognised. 3. **Bachelor's Degree:** first university qualification; usually 3-4 years. 4. **VET:** Vocational Education & Training at TAFE or a Registered Training Organisation (RTO). Remind students that a VET Diploma or Advanced Diploma may provide entry to, and credit towards, a university degree.

Supporting Documents

Lesson Activity	Teacher Instruction
Student Sign Up 5 mins	**Instruct** Provide students with the Software Engineer Virtual Work Experience link: https://year13.com.au/virtual-job-experience/softwareengineer/overview?preview=26bc6efdf174f44272b2629badc4543d Click on 'Activities' in the left menu - students will be prompted to log in or sign up. • **Log in** using Google credentials

	OR • **Sign up** with an email address and password. Enter month and year of birth, and indicate they are studying at school. Skip the mobile verification step by clicking 'next'
Activity 1: Understanding Coding Commands / Debugging Code 15 mins	**Set up the activity** 1. Read the introduction and activity description with the class. 2. 'Click here to get started' to go to **Scratch.** 3. Use the green arrow buttons to step through the 5 tutorials with the class. 4. Give students some time to experiment with the commands. 5. Return to the VWE to read the conclusion together and instruct students to 'mark as complete' all 3 sections.
Activity 2: Create A Pong Game Using Commands 20 mins	**Set up the activity** **Note:** Before starting this activity, decide if students will work in groups, with a partner, or individually to create their game. 1. Read the introduction and activity description with the class. 2. 'Click here to get started' to go to **Scratch.** 3. There are 15 tutorials for students to click through to learn how to create the game. Watch the first one with the class. 4. Give students some time to create their game. **Note:** If you have time, invite students who tried something different to show their game to the class. 5. Return to the VWE to read the conclusion together and instruct students to 'mark as complete' all 3 sections.
Activity 3: Create Your Own Game 30 mins - multiple lessons	**Set up the activity** Note: Before starting this activity, decide if students will work in groups, with a partner, or individually to create their game.

	1. Read the introduction and activity description with the class and discuss the type of games they want to create. 2. 'Click here to get started' to go to Scratch. 3. Give students time to create their games. 4. If you have time, invite students to share their games. 5. Return to the VWE to read the conclusion together and instruct students to 'mark as complete' all 3 sections
Reflection and Extension 15 - 30 mins	**Reflect** Upon completion, students are prompted to complete a multiple choice survey to measure the impact of the Virtual Work Experience. Deepen students' self-reflection by discussing their answers to questions: 1. **How likely are you to study STEM after school?** 2. **How much do you know about careers in tech? How much better is your understanding of working as a software engineer having taken this virtual work experience?** Return to the introductory questions to reflect on how students' understanding of the occupation has developed. **Certificates** • Students may download their certificates. • Instruct them to upload their certificate to their e-portfolio. **Extend** • Click on 'Next Steps' in the left side menu to explore related occupations. • Explore and shortlist cyber security VET and university courses using the Good Universities Guide.