Teacher Notes: Level crossing safety

Activity Aim:

This activity promotes the safe use of level crossings. Each week, it is estimated that almost 180,000 10-16 year old Victorians take risks at level crossings including not using the designated crossing and crossing with head phones or looking at their phones. The initial activity requires a close analysis of 6 photographs from the same level crossing in regional Victoria. The students are required to sequence the photographs in the correct order from when they approach the level crossing on foot to when it is safe to walk across the crossing. The second activity again requires a close inspection of 5 photographs, identifying and counting the number of safety features in each photograph, and then sequencing these in numerical order. The task is then to create a data table that others can use to collect safety feature data.

Victorian Curriculum Alignment

Mathematics (Level 5)	
Data Representation and Interpretation	Pose questions and collect categorical or numerical data by observation or survey (VCMSP205)
	Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies (VCMSP206)
	Describe and interpret different data sets in context (VCMSP207)
Critical and Creative Thinking (Levels 5 and 6)	
Reasoning	Consider the importance of giving reasons and evidence and how the strength of these can be evaluated (VCCCTR025)
Meta-Cognition	Investigate thinking processes using visual models and language strategies (VCCCTM029)
Technologies (Levels 5 and 6)	
Data and Information	Acquire, store and validate different types of data and use a range of software to interpret and visualise data to create information (VCDTDI028)

Listen up, look around, be aware

Resources:

- Class resource: PowerPoint slides Public Transport Safety: Awarewolf Level Crossing Safety
- Optional - computer/laptop to construct a data table
- Pencil, paper, ruler etc. to design data table

Tuning-in Activity: (5 minutes)

- As a whole class, explore the photographs and sequence the photographs to show a pedestrian how to cross the level crossing safely.
- Use the vehicle icon or people icon on each photograph as a means of identifying which photograph is being referred to (for example, the *tractor photograph* has the safety gate closed)

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- Since each photograph is from a natural setting, level crossings are busy, information-rich areas. As the photographs show, the students need to look closely for the clues and think critically and logically when creating the sequence.

Lesson Body: (45 minutes)

- **Activity 1** – Sequencing safe level crossing behaviours – as a whole class discussion, explore each photograph for signs of the V-line train approaching and passing through a level crossing (red flashing lights, boom gates down, gates open or closed or combinations of these)
    - Have students justify selecting a particular photograph's place in the sequence. Students should be encouraged to look carefully and critically. Perhaps consider a short roleplay to explore behaviours at level crossings. This role play can be conducted outdoors where the level crossing is drawn on the concrete using chalk. Students can be allocated roles to play (boom gates, the train, the pedestrian etc) to explore what sequences may be correct.
    - **The correct sequence is: motorbike, bus, tractor, truck, cement truck, taxi car**

- **Activity 2** – Students should be familiar with the close examination of a level crossing photograph and the variety of safety features that control the crossing of vehicles and pedestrians. Note we use the word pedestrian – a person walking or in a wheelchair, and cyclists and skaters *must* dismount and walk through a level crossing.
    - In pairs or small groups, have students explore each of the people icon photographs. For each photograph, have students identify and count and record the number of safety features in each photograph. Have the students write this in their general work exercise book (or similar).
    - The students can then sequence the number of safety features on the photographs in ascending or descending order. Have the students rewrite the list in ascending or descending order, again in their general work exercise book (or similar).
    - As a whole class, discuss the possible sequences looking for discrepancies and exploring why there are discrepancies (e.g. on the wheelchair photograph, the pole with lights and signage may have been counted as 1 safety feature, or it might have been counted as 5 safety features – separating the signage and lights and alarms etc).
    - When students understand the grouping of safety features into categories, set them the task of creating a data table – but not filling it in. In pairs or small groups, have the students create a data table in their general work exercise book (or similar) to collect the range of safety features they might find at a level crossing.
    - Swap exercise books and data tables between pairs or small groups, and instruct students to complete the table they have swapped.
    - Whole class discussion on what attributes are needed in such a data table so that all safety features are included.
    - This activity does not have a time limit; use the depth of student discussions as an indicator of when to move to the next step.

Formative Assessment:

The depth of student discussions can be assessed based on the student understanding of the safety features and the construction and completing of a data table.