

Travel safe

PTV learning outcomes

- Students are aware of the opportunities to use public transport
- Students understand why their actions are important to being **safe** on and around public transport
- Students know how to be **safe** on and around public transport

Duration

Sequences are intended to be delivered in 2–4 lessons.

Overview

Students use a basic programming language to design and create an app for younger students to encourage them to use public transport **safely**. They explore basic user-interface principles and take into account aesthetics and the development of a positive user experience. Their goal is to create an app that conveys **safety** information in the most accessible way, so that even students with limited skills in English language can understand it.



Curriculum alignment

Digital Technologies Levels 7–8

VCDTCD041

Design the user experience of a digital system, generating, evaluating and communicating alternative designs

VCDTCD043

Develop and modify programs with user interfaces involving branching, iteration and functions using a general-purpose programming language

Engage

Students explore icons that can be readily understood without additional contextual information. These might include icons such as the male and female symbols on toilets, telephone symbols, stop or emergency symbols and warning symbols.

Ask students to think of symbols that require contextual understanding to make sense, where their meaning is unclear if seen outside their expected context? What can they think of? What barrier does this present to the symbol serving the function of communicating meaning?

Using the example of the Save icon, the teacher can explain that we already have generations of students and some teachers in the school system who have never seen a floppy disk, the original source for the Save icon design. So students do not readily have an understanding of why the Save icon looks the way it does.

A collection of Australian signs can be found at <http://www.bradyid.com.au/en-au/products/signs-labels>. While taking care to cover the explanatory text, teachers can show some of these icons or pictograms to see if students can successfully interpret their meaning.

Teachers can also refer to the icons used by PTV within their mobile app interface – PTV mobile app legend (<https://www.ptv.vic.gov.au/footer/about-ptv/digital-tools-and-updates/mobile-apps/how-to-use-the-ptv-app/>).



Explore

Students are then guided on a virtual tour inside train stations and airports from across the world using Google Street View (<https://www.google.com/maps/d/viewer?hl=en&mid=1ugorNwXcVfmfaziTCX1D6u7xZLo>).

Students take note of the different signage they see during the exploration. The teacher can then use Google Street View to guide students through local tram stops, train stations and bus stops (<https://www.instantstreetview.com/>).

Depending on access to devices, students could explore the local areas themselves, individually or in pairs, using their own devices.

Students are now presented with the challenge of creating an app that explains **safety** tips for travelling on public transport. How can we make sure that everyone is **safe** when using our public transport?

Their app must be accessible both to a younger student and to a user with minimal skills in English language. They can select their preferred mode of transport from train, tram or bus. They can review the **safety** information from the PTV website at <https://www.ptv.vic.gov.au/more/travelling-on-the-network/travelling-safely/>, and select their mode of transport from the three options at the bottom of that web page.

Allow students time to explore the **safety** messages on the PTV website in pairs, and to test their understanding of the **safety** messages with one another. They could complete a PMI (Positive, Minus, Interesting) as they explore the site.

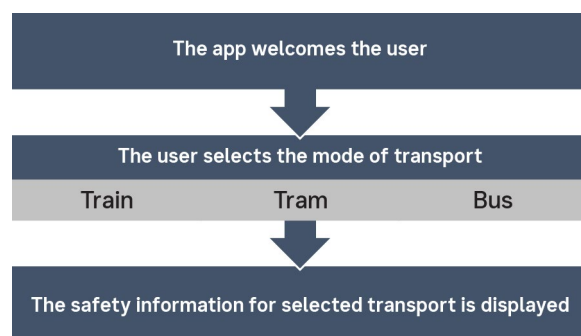
The students then brainstorm ideas about how they might present the **safety** information as symbols, animations or videos.

Explain

The teacher steps through the key skills required for the task with a given app-development program. Options include Scratch (<https://scratch.mit.edu/>) and Swift (<https://developer.apple.com/swift/>). Useful tutorials for app development with these programs can be found at:

- Swift: <https://www.youtube.com/playlist?list=PLxwBNxx9j4PUpjCEVwjqFvNecNvQ6Dj6G>
- iTunes: <https://itunes.apple.com/au/book/intro-to-app-development-with-swift/id1118575552?mt=11>
- Scratch: <https://scratch.mit.edu/help/videos/> and <https://scratch.mit.edu/explore/projects/tutorials/>

Whichever platform is used, the teacher can explain to students that they should start their app experience by having the user select which transport type they want to take. From there the app needs to show them how to be **safe** using that particular form of transport. The process should roughly follow:



The teacher should explain that 'user input' is when the user selects something or makes a choice on a program. 'Output' is what the program does as a result of the user input.

The program will need to include the ability for the user to select the mode of transport, and then the app will either scroll through symbols, play an animation or a video, or anything else related to the students' selected mode of transport that they wish to add. The teacher will need to explicitly cover how to create a user interaction on their selected platform, and they can find support for this in the tutorials listed above.

Students can work individually, in pairs or in small groups to create their apps, supported by the teacher.

Successful instruction in app development relies heavily on teacher knowledge of the chosen platform. An alternative to using a programming environment would be using Microsoft PowerPoint to achieve a similar effect using symbolic representation of the **safety** tips in an accessible way, and hyperlinking between pages. Students could also simply map their app design and plot the associated links and interactions on paper.

Elaborate

Students create and trial their apps on their own, and then with other groups, while the teacher challenges them to refine their designs through an iterative process. If the app is not working, why not? How can we find a solution to the problem? If the symbols are not accessible to a younger student, how can we change them?

A possible extension to this activity would be to create a link with a local primary school using a virtual technology (such as Skype, Polycom, Cisco Webex etc) to trial the effectiveness of the apps with a younger audience.

Evaluate

Students engage in scaffolded peer reflection on the success of the app design and how successfully it conveys the **safety** message. The assessment criteria used to determine the success of the app can include:

- Did the app effectively convey the **safety** messages?
- Were all messages easily understood?
- Would you understand the **safety** messages if you had limited skills in reading English?
- Would a younger child be able to understand the **safety** messages?
- Did the app work reliably?
- Was it visually appealing and user friendly?
- Was the user experience positive and informative overall?

