



Digital Technologies @ Home
Unplugged activities for students



Teachers



Parents
and carers

This activity is for: Years 7-10

TV Torment

This activity teaches...

How we interact with technology has a major impact on both our likelihood to continue using it and how widespread its adoption becomes. In this activity, we ask students to compare two different remote control devices, and ask them to reflect on which aspects of the designs are appealing.

We'll learn a little about what makes an interface intuitive and enjoyable to use, and how poor design decisions can turn users away from a product or application.

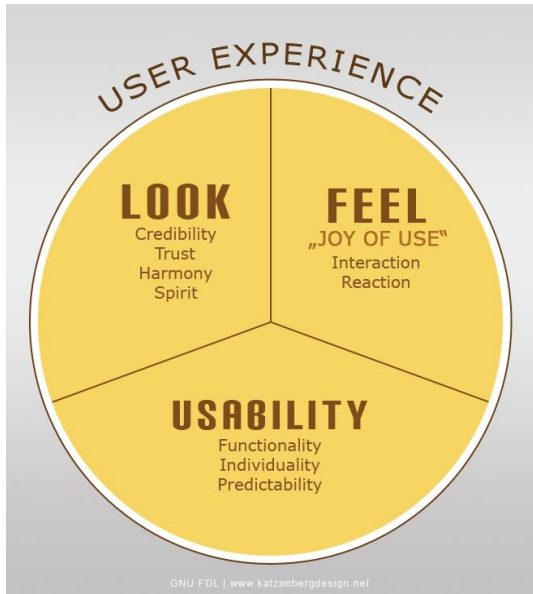
This activity is targeted towards secondary students and is expected to take 1 - 1.5 hours.

You will need...

A pencil and some paper.



TV Torment



Elements of User Experience (UX)

When we talk about the user experience of a system or product, we're interested in three main things:

- how easy it is to use;
- how it looks; and
- how it makes you feel, or "the joy of use".

Sometimes it can be hard to make all of these things work together to create a "perfect" experience for every user. This could be because there are some typical conventions that impact the design, the devices you're using require compromises to be made, or it may be because different types of users have different needs. It turns out designing interfaces to digital systems is harder than you think!

To introduce these ideas and get you thinking about what UX means, let's consider a device you interact with every day - the humble remote control!

Example 1: Your typical TV remote control

The image shown is an example of a remote control that might come with your television. Although each brand differs slightly, every remote has a similar combination of buttons in some variation of this layout.

There are a lot of buttons on this remote control, but most of them are rarely used. This can be confusing for some people, especially those that aren't very comfortable with technology.

The inclusion of lots of buttons also means that the buttons themselves are quite small, which can make them hard to press for people with limited motor function or large fingers.

Some of the buttons also have mysterious labels. What do the A, B, C and D mean on the coloured buttons? And do you know what all of the other symbols mean?





Example 2: Apple's Siri Remote

A lot of people regard Apple as a company that creates products that look great and have excellent usability. There's no doubt the Siri remote is simpler than the TV remote - it only has 6 buttons on it! It's also much smaller, making it easier to hold than the larger TV remote control. But let's think about some problems with this design.

Did you know the top section of the remote around the Menu and Home buttons is actually a touchpad? It's a convenient way to navigate menus, but an accidental slide of the finger can easily rewind, fast forward or otherwise interrupt your viewing.

You may also notice that with the buttons in the middle, both ends of the remote look similar. One of the common complaints people have of this remote is that it's easy to pick up the wrong way around, and that means the orientation of the buttons isn't what you expect, and the touchpad ends up in your palm and not at your fingertips.

Another thing that people criticise is the lack of colour - an all black remote means the buttons blend together, and it's harder to find the remote in the dark when you're watching your TV at night.

Addressing design problems

These problems aren't new - as the power of our TVs has improved and new features are added, the complexity of our remote controls has increased. Because many people find a lot of the new buttons unnecessary, some of them have made simple, home-made alterations to their remote controls to help their less technically-savvy relatives understand the main features.

You can see in this example that by using paper to cover up the buttons that aren't needed and writing a few simple instructions to help the user, it becomes clear just how few features are actually needed for this person's normal use case. Wouldn't it be great if, instead of this home-made change, the remote control just did what it needed to do out-of-the-box?



Designing for users

Different users will have different needs, and that makes designing a single product for everyone a difficult problem. One way to help you come up with a universal solution is to come up with lots of different designs that target a specific group of users.



Students

In the boxes below, come up with your own design for a TV remote control that would be ideal for the identified group of users. Think carefully about how each group uses their TV, and the devices they have connected to them.

Group 1: People like you

Group 2: People who only watch free-to-air

Group 3: People with limited fine-motor skills

Group 4: People with limited tech knowledge



Bringing your ideas together

Now that you've had a chance to think of the ways different people might use a remote control, the next step is to consider how you can take the most important aspects of each of your designs and combine them to create a design that works for as many people as possible. Answer each of the questions below, and then use these answers and the designs you did on the previous page to come up with your final design for a remote control.

List all of the common features in your designs that are important for **all** users.

Are there things necessary for the TV to work that aren't used often but must be included? What could you do to keep them separate from the main features?

To keep the remote control as useful as possible to most people, which features are you leaving out? How could those people access those features in a different way? Does this require you to add something new?

Final Design:

Want more?

Here are some further activities, online resources, assessment ideas and curriculum references.



Adapting this activity

Once students understand how to complete this activity, ask them to consider similar issues for a more complicated system or application. Consider a website or app they are familiar with, or how different devices change the user experience (e.g. phone vs computer).

For younger students, you can ask them to generate a single design for a specific audience e.g. thinking about how Grandma uses her TV and what buttons she needs on her remote control.

Keep the conversation going

- How did you determine which features were the most important?
- What compromises were made?
- Can you think of a different audience that would further alter your design (e.g. blind people)?
- Most TVs also have physical buttons - how does the UX of these compare to that of the remote control?
- Some remote controls have accelerometers and can be used like a wand. If you've used one of these, what do you think of that user experience? Who is it good for? What does it allow that buttons don't?
- Is there anything you do regularly when interacting with your TV that isn't suited to a remote control (e.g. text entry)? What would be a better alternative?

Keep learning

For High School students interested in learning more about user experience design, try some of these websites:

- <https://www.uxmatters.com/mt/archives/2017/03/3-kinds-of-simplicity.php>

- <https://www.springboard.com/blog/ux-design-principles/>

For teachers creating a portfolio of learning or considering this task for assessment

This task can be used as is, or you can require students to undertake a more thorough evaluation of their original four designs, and write a solution brief explaining how their final design satisfied the needs of the majority of users. They should also acknowledge any of the compromises they were forced to make.

Linking it back to the Australian Curriculum: Digital Technologies

The content descriptors below are for years 7-10. This activity covers user experience design, specifically the generation, evaluation and communication of alternative designs.

In Years 9-10, students should determine more formal criteria for evaluating the effectiveness of their designs. The criteria for evaluation should be developed with external stakeholders that represent the breadth of the users targeted by their solution.



Interactions

Design the user experience of a digital system, generating, evaluating and communicating alternative designs (ACTDIP028 - see cmp.ac/intcomp)

Refer to aca.edu.au/curriculum for more curriculum information.