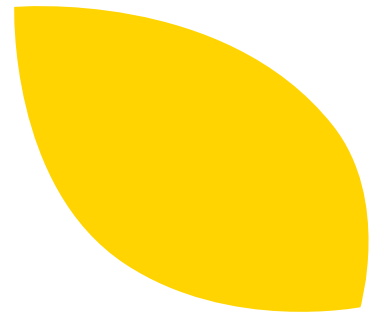


UV Meter Activity Pack.



Real-time UV awareness for SunSmart choices.

We care about protecting children and young people through education and supporting UV safe environments to ensure future SunSmart generations.



Protect yourself in **five ways** from skin cancer



SLIP



SLOP



SLAP



SEEK



SLIDE



UV Meter

The UV Meter designed by Cancer Council WA and B3 Electronic Design provides an accurate reading of solar UV radiation in real time for its location. Designed with its own UV sensor, it reports the World Health Organization's UV Index which is a measure of UV strength and skin damage risk. The UV Meter provides a real-time indication on the need for sun protection. Having an accurate measure of UV radiation assists with duty of care and work health and safety requirements.

This activity pack aims to provide you with useful information about your UV Meter and how to best utilise it to educate your school or service community about UV and sun protection.

How does the UV Meter work?

The UV Meter is solar powered and has a UV sensor which detects the UV level every 60 seconds. The highest reading is displayed in each 5-minute window as well as being sent to a web page via the mobile network. Data from each UV Meter is broadcast live on the **MyUV.com.au** website, so data from your UV Meter is available from anywhere in real-time. It is providing an excellent source of UV information for your school and your community. The UV Meter is connected to the internet which allows the meters to be remotely monitored and calibrated to ensure ongoing accuracy.



Where can I find the live data from UV Meters?

Visit the **MyUV.com.au** website and select 'change your location'. From here you will be able to access live data for your location and all other UV Meters. You can also click on 'see today's UV graph' to view the UV changing throughout the day. From this web page you have the option to click on the calendar and view previous UV Index graphs which can be used for comparing data across different seasons or dates.



Understanding the Sun and Ultraviolet (UV) Radiation

Preventing skin cancer

Australia has one of the highest rates of skin cancer in the world, with two in three people developing skin cancer during their lifetime. Overexposure to ultraviolet (UV) radiation from the sun has been identified as the cause of approximately 99% of non-melanoma skin cancers, and up to 95% of melanomas in Australia.

Research has established that childhood and adolescence are critical periods during which sun exposure could contribute to skin cancer later in life. It is estimated that more than 75% of all skin cancers could be prevented by practicing sun protective behaviours in childhood and adolescence. In addition to the protection schools and services can offer from physical exposure to UV (such as through uniforms/dress codes and shade provision), this resource aims to develop an understanding of UV radiation, influence positive behaviours and establish the use of daily lifelong sun protection practices.

About the UV Index

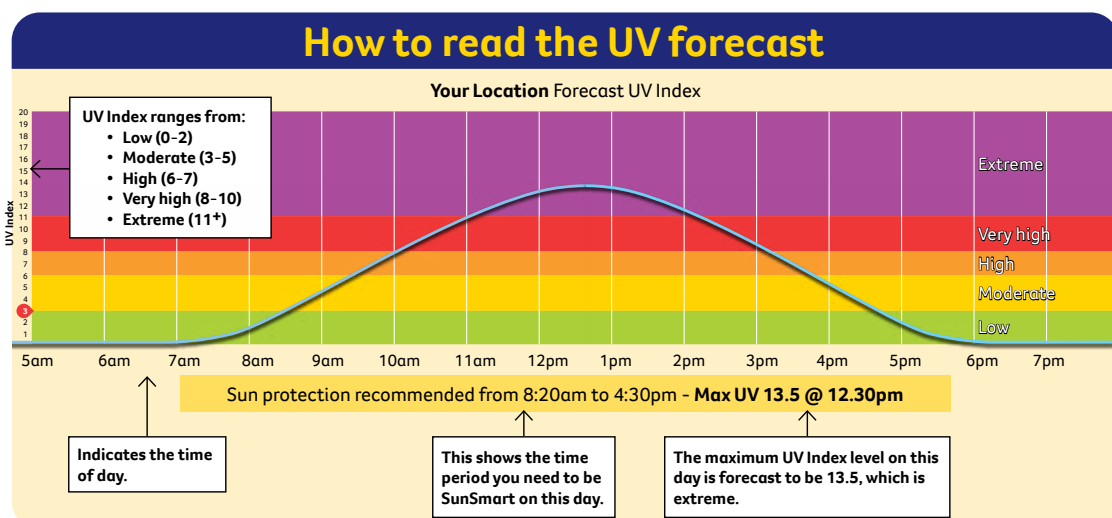
The UV Index indicates the strength of UV radiation reaching the ground. A UV level of 3 is high enough to cause damage to unprotected skin, therefore it is important to protect skin when the UV Index is 3 and above. The higher the UV Index value, the greater the potential for skin damage.

The strength of UV radiation changes throughout the day, UV radiation peaks around the middle of the day when the sun is directly overhead, called Solar Noon. This is regardless of temperature. UV radiation varies according to latitude higher (the closer you are to the equator); time of year (highest mid-summer); time of day (peaking at solar noon); and some weather conditions such as cloud and/or ozone cover.

What is ultraviolet (UV) radiation?

Ultraviolet (UV) radiation is a type of energy produced by the sun and some artificial sources, such as solariums. UV radiation damages the DNA in skin cells and is the main cause of skin cancer. UV damage also causes sunburn, tanning, premature ageing and eye damage.

UV radiation cannot be seen or felt and is different to infra-red radiation (heat), therefore UV levels are not related to temperature. UV radiation can be at damaging levels even on cool or cloudy days. Your senses cannot detect UV radiation, so you won't notice the damage to your skin until it has been done.



Sun protection times

Sun protection is recommended when UV levels are 3 (moderate) or higher. Your local UV forecast (not the temperature) should be used to assess whether sun protection is required for outdoor activities.

You can find the sun protection times for your location on the free SunSmart app or widget, at the Bureau of Meteorology website or app, or at **MyUV.com.au**. During the sun protection times remember to protect your skin and eyes by using sun protective clothing, sunscreen, a hat, shade and sunglasses. Don't just wait for hot and sunny weather, or Term 1 and 4.

Summary

The sun's ultraviolet (UV) radiation is the major cause of skin cancer. UV damage also causes sunburn, tanning, premature ageing and eye damage. The good news is you can reduce your skin cancer risk by being SunSmart.

Sun protection is recommended whenever UV levels reach 3 or above. Below 3, sun protection isn't needed unless you are outdoors for extended periods (such as an outdoor worker) or near reflective surfaces like snow. Unlike the sun's heat and light, we can't see or feel UV radiation – the UV Meter provides a visual prompt for when sun protection is needed in real-time.

Key Messages for Schools

- The sun produces UVA (skin damage/skin cancer, aging, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth). *See Resource 5.*
- The sun produces heat that we can feel and light that we can see.
- The sun produces ultraviolet radiation that we cannot see or feel.
- A sunburn is a radiation burn from the sun. The sun produces ultraviolet radiation that causes damage to the skin.
- When the UV Index is 3 or above, sun protection is required.
- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface.
- Clear sky UV peaks at solar noon and follows a bell curve pattern. Solar noon is the point at which the sun is directly overhead. *See Resource 7.*
- UV radiation can reflect off surfaces, so it is important to use a combination of sun protection. *See Resource 6.*
- UV and heat are not the same thing. We do not only need to use sun protection when it is hot. The UV index can be 3 or above when it is cool and cloudy too.
- Be a positive SunSmart role model! This is a powerful key for children adopting healthy habits that could last a lifetime.

Activity 1: Getting to Know Your UV Meter

Getting to know your UV Meter is an introduction activity for students to understand the components of the UV Meter and its function. By understanding the role of the different parts of the UV Meter, students will use the correct vocabulary when discussing and interacting with the UV Meter.

Resources

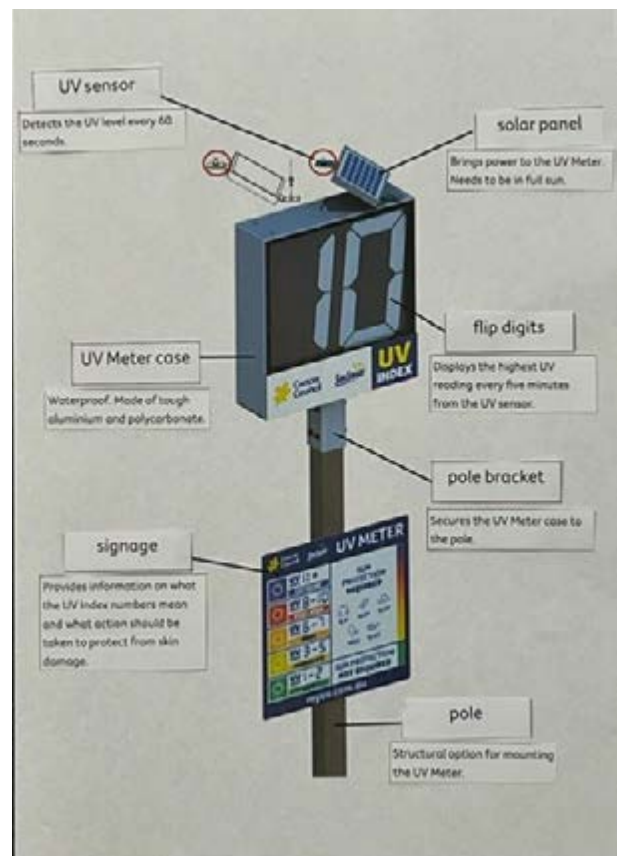
- Resource 1a and 1b: Getting to know your UV Meter
- UV Meter
- YouTube video: [Cancer Council WA UV Meters](#)

Instructions

1. Watch [Cancer Council WA UV Meters](#) video.
2. Be SunSmart and head outside to visit the UV Meter.
3. Discuss each part of the UV Meter and their function. Resource 1 will assist with this.
4. Ask key questions to prompt discussion around UV radiation and sun protection.
5. Return to classroom and complete resource 1.

Key questions

- What is the purpose or role of the UV Meter?
- What does a UV Meter tell us? Why is that important?
- How can UV meters help us be SunSmart?
- Why is it important to be UV aware?
- How do we know that UV radiation is there?
- What have you noticed about the numbers changing?



Parts of a UV Meter and their function

Activity 2: Daily UV Forecast

Children are at school or in care when the UV Index is at its peak, which is at solar noon every day. Developing and embedding healthy habits and routines is an opportunity for children to adopt these healthy habits that could last a lifetime. Incorporating the UV forecast in the morning routine when you write up 'today's date' educates children and students about the importance of protecting their skin when the UV is 3 or above and make informed choices and actions to prevent skin damage.

Resources

- UV Meter
- UV forecast for your location on the free [SunSmart app or widget](#), at the [Bureau of Meteorology website](#) or [app](#), or at [MyUV.com.au](#)
- Resource 7: How to read the UV forecast poster

Key questions

- What was the UV forecast yesterday?
- What do you predict the UV forecast will be today?
- What are the sun protection recommendations?
- What do the different colours and levels mean?
- What have you noticed about the numbers changing?

The UV forecast could be written on a whiteboard, Dry-erase poster or [Today's UV poster](#) which is free to download or [order on the Generation SunSmart website](#) (Western Australia only).



Activity 3: Design a UV Meter

The Design a UV Meter lesson is a fun, creative and interactive way for student to extend and consolidate their knowledge about UV and the UV Index. It is an opportunity to research what a UV Meter is and why they play an important role in skin cancer prevention.

Resources

- YouTube Video – [The UV Index explained](#) - Cancer Institute NSW
- Resource 2: Design a UV Meter planning sheet
- Resource 5: How to read the UV forecast poster
- Range of recyclable art and craft materials



Example UV meter by Year 6 students at Scarborough PS

Instructions

1. Watch [The UV Index explained](#) - Cancer Institute NSW YouTube video.
2. Visit your UV Meter. Activate prior knowledge about UV and sun protection by asking key questions.
3. Distribute design a UV Meter planning sheet.
4. Research and visit the **MyUV.com.au** website for information about UV Meters. Students take notes guided by key questions.
5. Students begin to develop their design and label their diagrams with detail.
6. Build and construct their UV Meter.

Key questions

- What is a UV Meter?
- How can UV meters help us be SunSmart?
- Why is it important to be UV aware?
- How do we know that UV radiation is there?
- What is the difference between heat and UV?
- What are some strategies we can use to protect ourselves from UV?

Email a photo of your UV Meters to sunsmart@cancerwa.asn.au We would love to see them!

Activity 4: What's the Difference – UV and Heat

The learning intention of this activity is to explicitly teach students about the difference between UV and heat. Some people incorrectly use temperature to determine when to use sun protection, rather than the UV Index. The UV Index can be just as high on a cool or even cold days as it is on a hot, especially when the skies are clear. By recording the UV Index and weather conditions using your day UV Meter, it distinguishes the difference between temperature and the UV Index.

Resources

- UV Meter
- Resource 3: UV record sheet
- Resource 7: How to read the UV forecast poster
- Optional: [When the UV hits 3 or above, you need to be SunSmart](#) video



Instructions

1. Distribute Resource sheet 3.
2. Visit the UV Meter 9am and 1pm each day for a week.
3. Record the UV readings and weather conditions (sunny, cloudy, cold, hot etc) at each target time.
4. Class discussion, summarise activity, findings and key questions.

Key questions

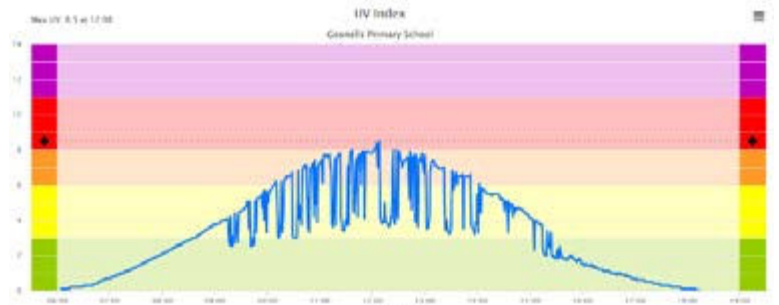
- What is the difference between heat and UV?
- When do we need to use sun protection?
- What are some ways we can protect our skin?
- What does the UV Index tell us?
- How can we incorporate the UV forecast into our daily routines?

Activity 5: UV Graph

Your UV Meter is sending live local UV data to the **MyUV.com.au** website that you can access and incorporate into your mathematics curriculum. It provides a great opportunity for students to understand that the weather conditions can affect the UV readings, but sun protection is still required.

Resources

- Resource 4: UV Index graph example
- Shared screen or device
- Resource 7: How to read the UV forecast poster
- Resource 8: UV Index



Instructions

1. Watch [The UV Index explained](#) - Cancer Institute NSW YouTube video.
2. Visit your UV Meter. Activate prior knowledge about UV and sun protection by asking key questions.
3. Distribute design a UV Meter planning sheet.
4. Research and visit the **MyUV.com.au** website for information about UV Meters. Students take notes guided by key questions.
5. Students begin to develop their design and label their diagrams with detail.
6. Build and construct their UV Meter.

Key questions

- What do you think the graph is telling us?
- What do you think any 'dips' on the graph mean?
- When the UV Index drops below 3 for a short period, is sun protection still required? Why/why not?
- What do the different background colours mean?
- What are some ways we can protect our skin?
- How does the weather condition affect the UV readings?

Resource 1a:



Resource 1b:

solar panel
UV sensor
UV Meter case
signage
pole
pole bracket
flip digits

solar panel
UV sensor
UV Meter case
signage
pole
pole bracket
flip digits

solar panel
UV sensor
UV Meter case
signage
pole
pole bracket
flip digits

Structural option for mounting the UV Meter.
Brings power to the UV Meter. Needs to be in full sun.
Waterproof. Made of tough aluminium and polycarbonate.
Displays the highest UV reading every five minutes from the UV sensor.
Detects the UV level every 60 seconds.
Provides information on what the UV Index numbers mean and what action should be taken to protect from skin damage.
Secures the UV Meter case to the pole.

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Resource 2: Design a UV Meter Planning Sheet

Research and explore images of UV Meters.

Make some notes of your observations.

1. _____
2. _____
3. _____
4. _____
5. _____

Draw, plan and label your design here.

Make a list of the materials required.



Resource 3: UV Record Sheet

Task: Visit your school's UV Meter daily at 9am and 1pm each for a week. Record the UV reading shown on the flip digits and weather conditions observations (cloudy, partly sunny, hot, cold etc).

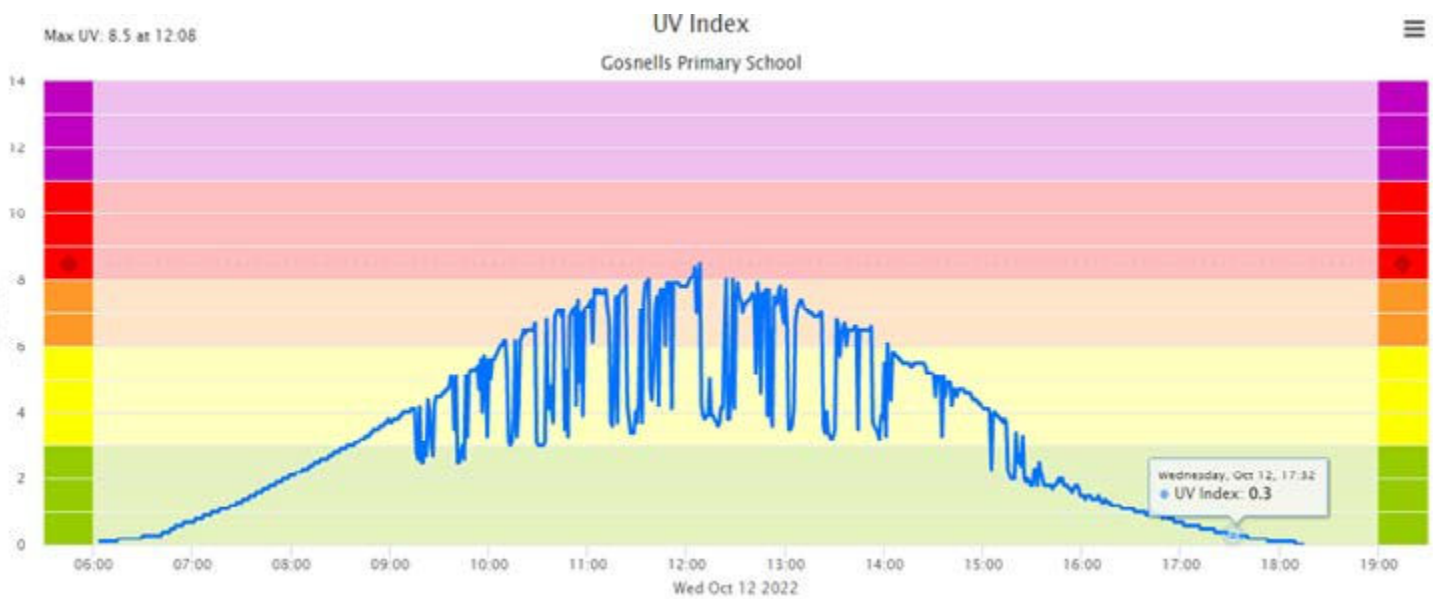
Discuss the results and findings.

Time and Day	UV reading	Weather conditions. Temperate forecast.
Monday @ 9am		
Monday @ 1pm		
Tuesday @ 9am		
Tuesday @ 1pm		
Wednesday @ 9am		
Wednesday @ 1pm		
Thursday @ 9am		
Thursday @ 1pm		
Friday @ 9am		
Friday @ 1pm		

What did you notice? Record your findings.

Resource 4: UV Index Graph Example

- The graph shows a standard day of the UV increasing, peaking at noon and then decreasing for the remainder of the day.
- The 'dips' on the graph indicate that there is cloud cover shading the UV sensor causing the UV reading to drop.
- Even when the UV Index may drop to below 3 for a short period of time, this is caused by weather conditions, the UV is still at damaging levels and sun protection is required.



Gosnells Primary School 12 Oct 2022

October 2022						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

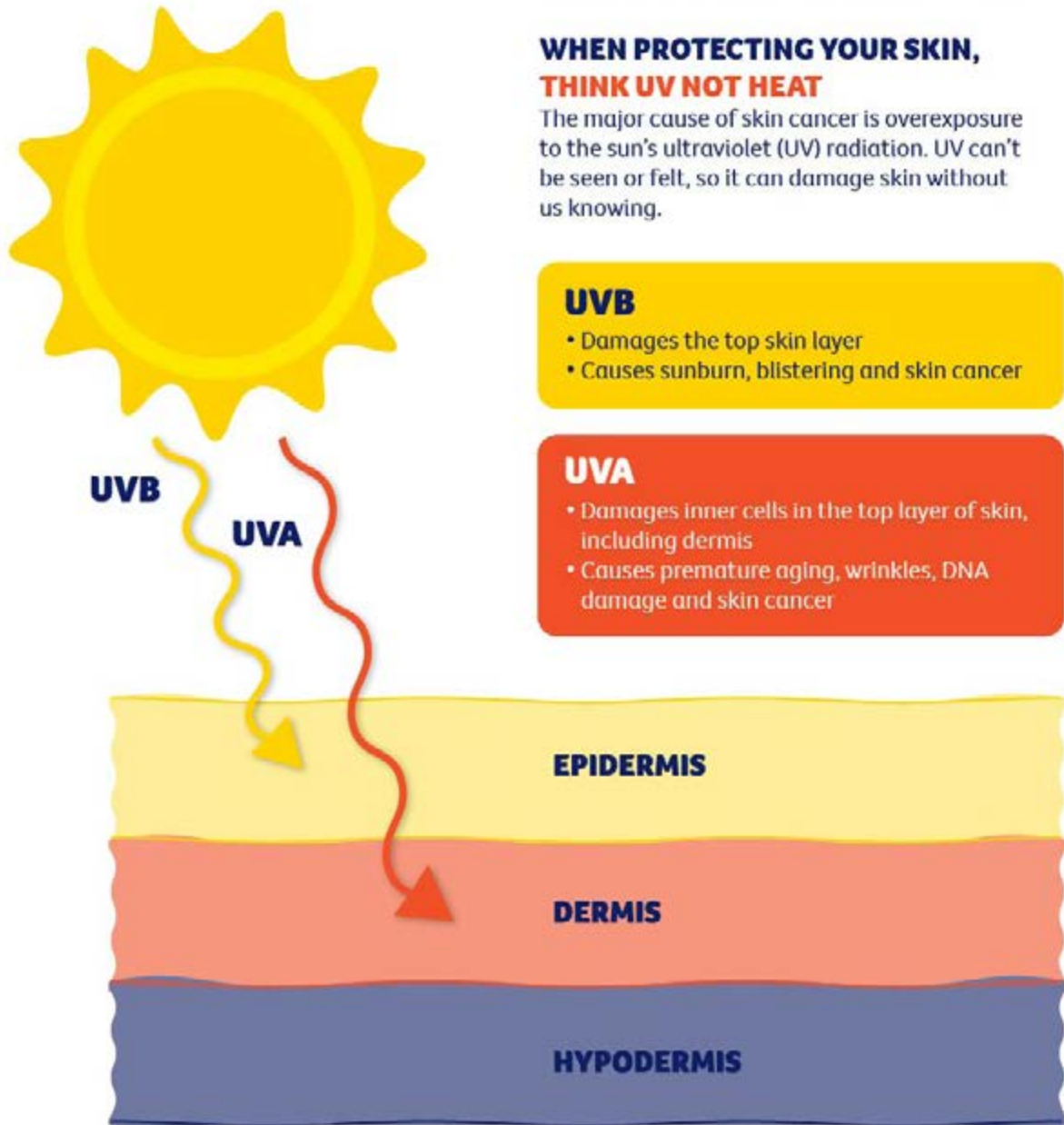
Return to Meter Summary Download Excel File

Resource 5:

HOW UV AFFECTS THE SKIN

WHEN PROTECTING YOUR SKIN, THINK UV NOT HEAT

The major cause of skin cancer is overexposure to the sun's ultraviolet (UV) radiation. UV can't be seen or felt, so it can damage skin without us knowing.



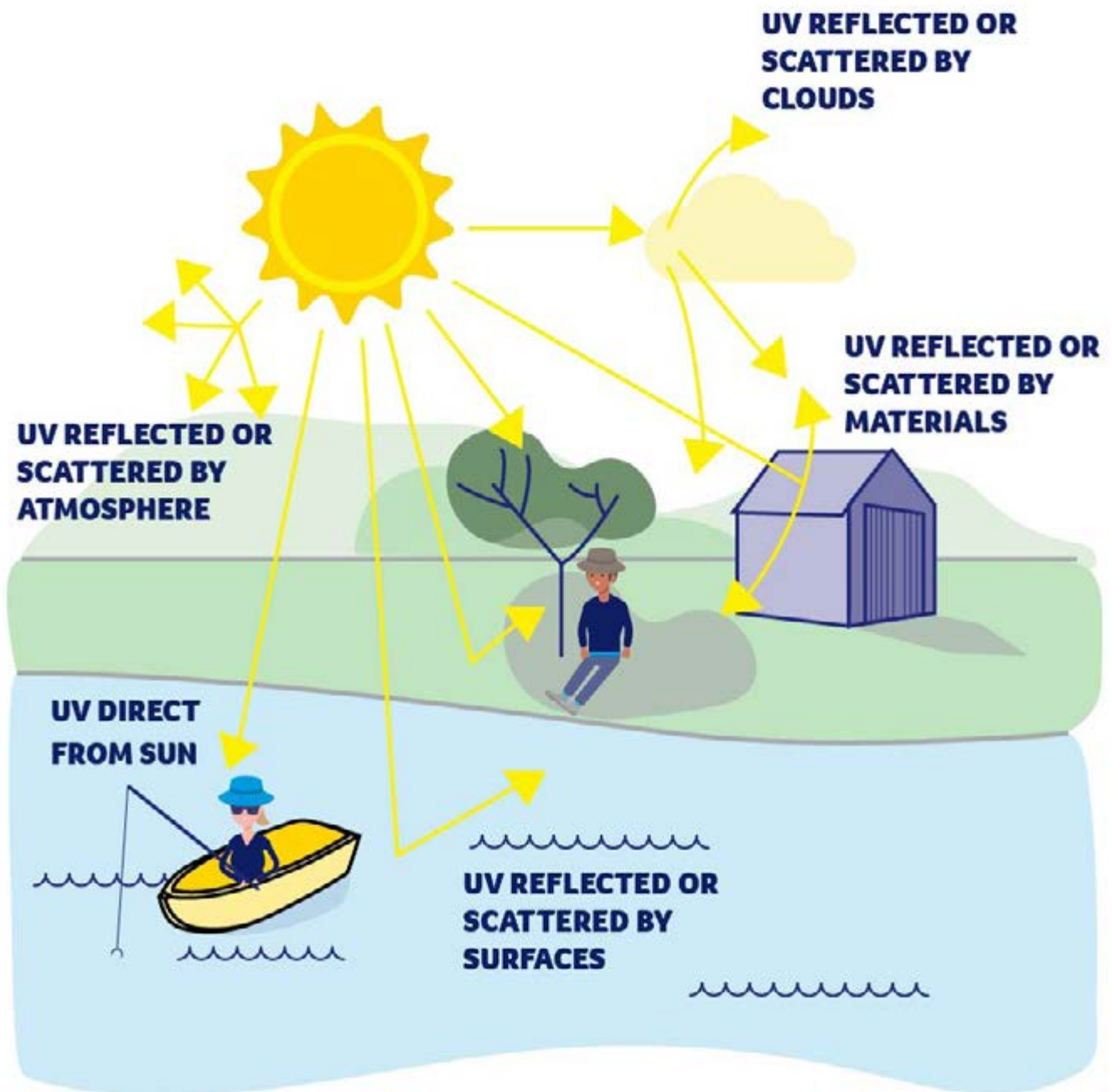
UVB

- Damages the top skin layer
- Causes sunburn, blistering and skin cancer

UVA






- Damages inner cells in the top layer of skin, including dermis
- Causes premature aging, wrinkles, DNA damage and skin cancer

Resource 6:



Resource 7:



	UV INDEX 11+ EXTREME
	UV INDEX 8-10 VERY HIGH
	UV INDEX 6-7 HIGH
	UV INDEX 3-5 MODERATE
	UV INDEX 1-2 LOW

SUN PROTECTION REQUIRED



SLIP



SLOP



SLAP



SEEK



SLIDE

SUN PROTECTION NOT REQUIRED

myuv.com.au



MyUV.com.au



For support and information on cancer and cancer-related issues, speak to a Cancer Council nurse on **13 11 20**. Calls are confidential and available statewide Monday to Friday during business hours.