

# SunSmart UV Alert

Instructions and answers



Suitable for Levels 5 and 6, Years 7–10

This activity can be done individually or in groups.

It can be incorporated into the Victorian Essential Learning Standards (VELS) Strands:

- Physical, Personal and Social Learning: Health & PE
- Discipline-based Learning: Geography
- Interdisciplinary Learning: Design, Creativity and Technology; Thinking

Whenever ultraviolet (UV) radiation Index levels reach 3 and above, sun protection is required. At that level, UV radiation is intense enough to damage the skin and eyes and contribute to the risk of skin cancer. In Victoria, average UV levels are 3 and above from the beginning of September to the end of April so a combination of sun protection measures are needed during these months.

From May to August, average UV levels in Victoria are below 3 so sun protection isn't needed unless you are in alpine regions or near highly reflective surfaces such as snow or water.

So how do you know what the UV levels are?

Go to the Bureau of Meteorology link [www.bom.gov.au/weather/uv/](http://www.bom.gov.au/weather/uv/) and use the information from this website to answer these questions.

1. Explain the function of the UV Index and when the SunSmart UV Alert is issued.

*The UV Index is a simple and informative way of describing the daily danger of solar UV radiation intensity. Each point on the Index scale is equivalent to 25 milliWatts/square metre of UV radiation.*

*The UV Alert is issued when the UV Index forecast is 3 or above, a level that can damage your skin and lead to skin cancer. The higher the Index value, the greater the potential for damage to your skin. The UV Alert shows the time of the day people need to use sun protection.*

2. List the places where you can access the SunSmart UV Alert.

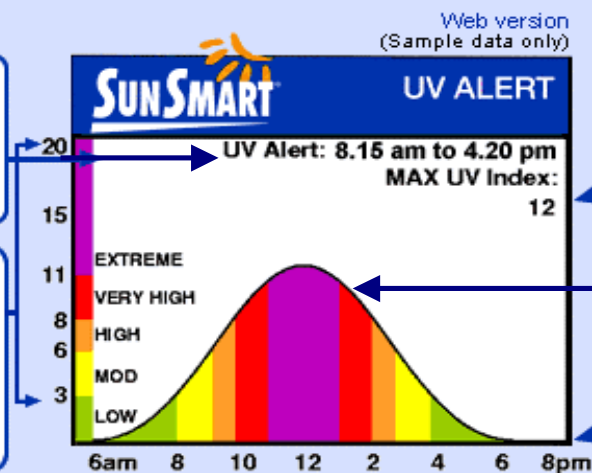
*The UV Alert can be found on the weather page of most Australian daily newspapers. SunSmart UV Alerts are linked from the forecast pages for each state and territory as well as the UV Index home page at [www.bom.gov.au/weather/uv/](http://www.bom.gov.au/weather/uv/).*

3. a. Using the example below, fill in the information boxes and learn how to use the SunSmart UV Alert.  
b. Identify which level the Index of 12 correlates with.

## How to read the UV Alert

This shows the times during the day the UV level will be 3 and above. This is the time period to use sun protection.

This shows the UV Index levels which range from low (1-2) to extreme (11+). If it's not green, wear sunscreen!



This shows the maximum UV level forecast for the day

This bell curve represents the changing UV levels across the day.

This shows the time period across the day

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4. Explain why you should get into the habit of regularly checking the SunSmart UV Alert.

*It indicates the times of the day when sun protection is needed and when it's not i.e. I don't need to wear a hat, sunscreen etc all day – only when the Index is 3 and above; at other times, I won't get burnt and can enjoy the sun for vitamin D production, etc.*

5. Go to [www.bom.gov.au/weather/vic/vic-uv-index-map.shtml](http://www.bom.gov.au/weather/vic/vic-uv-index-map.shtml) and discover the UV Index and sun protection times using either the Forecast Graphs or Values for the following places in Victoria:

Location	UV Index	Sun protection times
Melbourne		
Ballarat		
Mildura		
Geelong		
Mt Hotham		
Mornington		

6. Now find the UV Index (e.g. 13), rating (e.g. extreme), and sun protection times (e.g. 8.40 am to 5.20 pm) for the following places around Australia:

Location	UV Index	Sun protection times	Rating
Darwin			
Katherine (NT)			
Alice Springs (NT)			
Brisbane			
Cairns (QLD)			
Broken Hill (NSW)			
Sydney			
Halls Creek (WA)			
Broome (WA)			
Perth			
Hobart			
St Helens (TAS)			
Canberra			
Adelaide			

7. Briefly describe your observations from your findings above, with regard to the different levels of UV radiation and times sun protection is required at the different locations.

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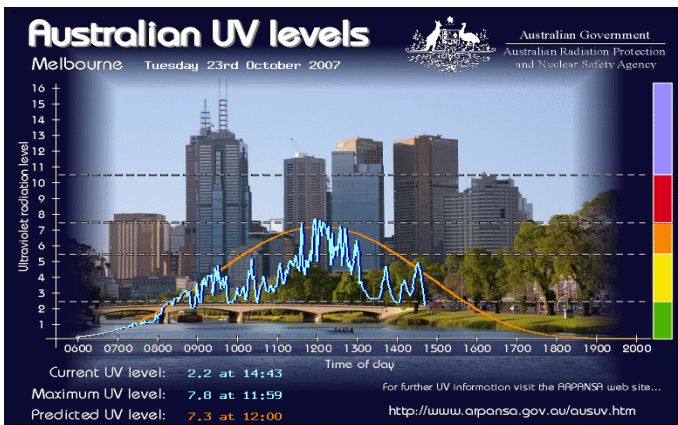
8. Describe why the UV radiation level is not linked to temperature i.e. why can you still get sunburnt on a cool 19 degrees day, or even when the sky is overcast?

*Ultraviolet (UV) radiation can't be seen or felt. Heat or high temperatures are not an indication of UV radiation. Cloudy days deceive many people into thinking the danger of UV radiation is minimal. Most clouds block some UV radiation, but the degree of protection depends on the type and amount of cloud. Some clouds can actually increase the UV intensity on the ground by reflecting and refracting the sun's rays. People can also be caught unawares when a small break in an overcast deck of clouds allows a brief burst of intense radiation to reach the ground.*

*Cold air can also be deceptive as temperature is not directly related to UV intensity. Skiers should take particular care as reflective snow on the ground and high altitude raise the UV Index significantly relative to its value at sea level.*

9. Over breakfast you check the SunSmart UV Alert and find it is expected to be over 3 for most of your school day. Analyse your personal sun protective responses.

*e.g. '3 and above indicates sun protection is needed, so I'd ensure I used my moisturiser that has an SPF 30+, then also put sunscreen on before I left the house, put my broad brimmed hat and sunglasses into my bag ready for PE class', etc.*



10. Using the SunSmart website at [www.sunsmart.com.au](http://www.sunsmart.com.au), check the Realtime (current) UV levels for Melbourne (similar to this example) and across Australia.

a. Comment on your observations of these charts e.g. does the real UV level closely follow the predicted graph, or does it vary?

b. Does the real UV level exceed/fall below the predicted UV level?

c. What is the current UV level on your chart?

11. List all of the factors that could cause variations in the UV levels throughout the day.

*Factors such as latitude, ozone, cloud, reflection from surfaces, time of year and time of day determine UV levels; they also vary in intensity and level across Australia on any given day. Note - Heat or high temperatures are not an indication of UV levels.*

12. Research activities:

- What are the different types of UV radiation and which one/s are most likely to cause damage to your skin and eyes, and skin cancer?
- What factors influence UV radiation levels? (latitude, altitude, etc.)
- Discover how the SunSmart UV Alert can help you safely obtain your beneficial 'dose' of vitamin D from the sun.
- Explore the different skin types (i.e. Fitzpatrick skin types 1–6) and how they are susceptible to damage by UV radiation.
- Determine your skin type and what measures you must take for your own skin protection.