Cancer Council WA | SunSmart®

Curriculum Resource.

Protecting My Skin, Year 5-6

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

In the spirit of deepening relationships, Cancer Council WA acknowledges all the Traditional Custodians of Country throughout Western Australia and recognises their continuing connection to land, waters, sky, and community. We also pay our respect to their Elders and extend that respect to all Aboriginal peoples living and working in this area.

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Acknowledgements

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Purpose

The purpose of this resource is to provide opportunities for students to grow and shape views related to promoting positive health practices. The aim is to positively impact on students' critical thinking in health, safety and wellbeing.

The teaching and learning activities are designed to allow student growth in self- responsibility, self-awareness, decision making and respect of self and others. It promotes the development of skills from the Western Australian Curriculum and in particular, the development of skills from the Personal and Social Capability learning continuum. The focus is on the development of students who can manage their own wellbeing, make informed decisions about their lives and take positive action to reduce risk. Teaching and learning experiences provide opportunities for students to understand, practise, rehearse and adopt positive personal health practices related to sun protection.

The Personal and Social Capability learning continuum is organised into four interrelated elements of:

- Self-awareness
- Self-management
- Social awareness
- Social management.

Health Literacy

The development of the three dimensions of Health Literacy is a focus within this resource.
Teaching and learning experiences focus on developing knowledge, understanding and skills related to the following health literacy dimensions:

- Functional – knowledge, understanding and skills related to comprehending, evaluating and applying health information
- Interactive – knowledge, understanding and skills related to making decisions and setting goals to enhance health
- Critical – skills related to being able to selectively access and critically analyse health information from a variety of sources and apply this to promote own and others' health.

For more information on the topics below, please see our Protecting My Skin Supporting Document Year 5-6

- Connections to the principles of teaching and learning
- Melbourne Declaration on Educational Goals
- Evidence based pedagogy
- Aboriginal and Torres Strait Islander priorities
- Western Australian curriculum focus area
- Curriculum links by learning area
- Australian Institute for Teaching and School Leadership (AITSL) standards

Resource Design

Protecting My Skin: Year 5-6 is designed to:

- explore a range of preventive sun safety health measures that promote and maintain an individual's health, safety and wellbeing
- explore a range of strategies that promote a safe, healthy lifestyle, such as practising sun safety
- identify practical strategies for promoting a healthy lifestyle and adapting to changing situations that occur as they grow and mature
- provide access to a range of reliable sources of information that inform health, safety and wellbeing, such as:
  - internet-based information
  - community health organisations
  - publications and other media
- practise and rehearse positive personal health practices related to sun protection
- identify and apply criteria to assess the credibility of different sources of health information
- provides opportunities for students to:
  - take positive action to promote safe and healthy lifestyles practices in a range of contexts
  - access and understand health information and empower them to make healthy and safe choices
  - develop, enhance, and exhibit attitudes and values that promote a healthy lifestyle
  - develop skills in accessing reliable and up-to-date information and continue to explore ways they can manage negative health influences and pursue a healthy lifestyle.

Resource Learning Intentions

Students will:

- learn safe sun practices
- make decisions about their own health, safety and wellbeing
- learn about ways they can take action to promote safe and healthy lifestyle practices in a range of contexts
- focus on preventive measures to enhance their own health and promote a healthy lifestyle
- explore the promotion of sun safety
- explore a range of preventive sun safety health measures that promote and maintain an individual's health, safety and wellbeing
- understand, explore, practise, rehearse and adopt positive personal health practices related to sun protection
- develop an understanding of how UV behaves and the effects and impact on the skin
- identify and develop strategies for dealing with unsafe sun and UV exposure situations
- explore ways they can manage negative health influences and pursue a healthy lifestyle
- investigate facts and myths relating to sun protection
- interpret the accuracy of SunSmart health information communicated in the media and online environments

Support

Contacting 13 11 20 is the best way to access information about all our cancer support services and resources. Support is given for cancer patients, their family and friends.

Our services include:

- Accommodation for country patients at our Cancer Council Lodges
- Referral to cancer support groups, and counselling services
- Practical support and financial hardship services
- Legal and financial planning assistance
- Cancer Council Wig Library
- Complementary therapies such as massage, and reflexology
- Life Now exercise, yoga, meditation or mindfulness classes
- Wellbeing after Cancer resources and coaching by telephone
- Cancer-related booklets, brochures, factsheets, webinars and podcasts.

Teaching and Learning Experiences

Resource Overview

Key Idea	Year 5-6
Health Literacy	The development of the three dimensions of health literacy is a focus within this resource. Teaching and learning experiences focus on developing knowledge, understanding and skills related to the following health literacy dimensions: • Functional – knowledge, understanding and skills related to comprehending, evaluating and applying health information • Interactive – knowledge, understanding and skills related to making decisions and setting goals to enhance health • Critical – skills related to being able to selectively access and critically analyse health information from a variety of sources and apply this to promote own and others' health.

Understanding the sun and UV radiation			
Concept	Learning Intentions	Lessons	Curriculum Links
1. The sun and our skin	• know that the sun produces three main things; heat, light and ultraviolet (UV) radiation • understand that UV radiation is invisible and that you cannot see or feel it • understand that too much UV radiation from the sun can cause sunburn and skin damage • understand the need to minimise and/or avoid exposure to UV when it is at its strongest • explain the importance of protecting the skin to avoid sunburn and long-term damage • know that there are five strategies to protect your skin from the sun: Slip, Slop, Slap, Seek and Slide.	1. How the Sun Sees You? 2. My Skin Story 3. Building a 3D Model of the Skin 4. How Shadows Indicate the Sun's Strength 5. Power of the Sun	HASS English Science Health The Arts Design and Technologies
2. Heat and UV from the sun: What's the difference?	• consolidate and understand that the sun gives off energy that we can see (visible light), heat (Infrared) that we can feel, as well as an invisible energy that we cannot see or feel, ultraviolet (UV) radiation • observe the effects of UV radiation • understand that too much sun can damage their skin • consolidate that there is a difference between UV and heat • understand that too much exposure to UV radiation can cause sunburn, skin damage and possibly skin cancer later in life • develop an understanding of how to protect their bodies from the harmful effects of UV • explore/demonstrate the effects of UV radiation on reactive objects • understand the need to minimise and/or avoid exposure to the sun when it is at its strongest or peak times of the day • understand the need to protect their skin when the UV Index is 3 or above.	1. The UV Index Explained 2. UV Views: Continuum 3. Shining the Light on UV 4. The World in UV (Perception and Reality) 5. Making UV Visible: Glowing Water 6. SunSmart Board Game 7. Let's PEEL Back a Myth 8. SunSmart Global UV app 9. SunSmart Accessories 10. Design a UV Meter	English Science Health The Arts Design and Technologies Mathematics

Too much sun can hurt your skin			
Concept	Learning Intentions	Lessons	Curriculum Links
3. Our seasons	• understand that there are different seasons • know that winter/wet and summer/dry are different times of the year • be able to name major differences between winter and summer • know that you can still get sunburn in winter • understand that sun protection is required even when it is cool and cloudy • understand that too much sun can hurt the skin • understand the need to protect the skin when the UV Index is 3 or above.	1. Our world 2. Diverse and Connected World 3. UV Across the Seasons 4. Protecting Life: Martian Challenge 5. SunSmart Dictionary Definitions	HASS English Science Health The Arts Mathematics
4. Keeping my skin sun safe	• know that too much sun can damage skin • understand the need to protect the skin when the UV Index is 3 or above to prevent sunburn • identify when the skin is at risk • explain the five strategies to protect the skin: Slip, Slop, Slap, Seek and Slide • understand to use a combination of these strategies.	1. Sunsmart Gallery Walk 2. SunSmart Word Storm Art 3. Write a Letter to Your Younger Self 4. SunSmart Teen Warning 5. SunSmart Diorama 6. Hat Investigation: See My Hat	English Science Health The Arts Technologies Mathematics
How to be SunSmart: Keeping your skin sun safe			
5. Taking positive action to reduce risk: Promoting and actioning effective UV protection strategies.	• understand why sun safety is important and learn how to take effective UV protection actions e.g., hat wearing, accessing daily UV levels • know that the skin needs protection and that the best sun protection practices are using a combination of Slip, Slop, Slap, Seek and Slide • understand, explore, practice, rehearse and adopt positive personal health practices related to sun protection • experience, participate and practice a variety of health, safety and wellbeing actions related to sun protection • explore what actions promote sun health, sun safety and wellbeing.	1. Sun Protection Awareness 2. Hats are important in High School too! 3. Puppet Show 4. Be a UV Legend 5. Urban Design 6. Our School Sun and Shade Audit 7. UV Social Media 8. Two Sides of the Sun: Advert Analysis 9. SunSmart Relay	HASS English Science Health and Physical Education The Arts Design and Technologies

INTEGRATED LEARNING

Sun safety teaching and learning experiences can be integrated across a range of learning areas.

TEACHING & LEARNING EXPERIENCES

Key idea: Understanding the sun and ultraviolet (UV) radiation

BACKGROUND NOTES

Preventing skin cancer

Australia has one of the highest rates of skin cancer in the world, with two in three people developing skin cancer at some time in their lives.[1] 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.[2, 3]

Research has established that childhood and adolescence are both 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.[4] In addition to the protection schools can offer from physical exposure to UV (such as through uniforms 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.

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 aging 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 until it has been done.

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 level 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, see figure 1, below.

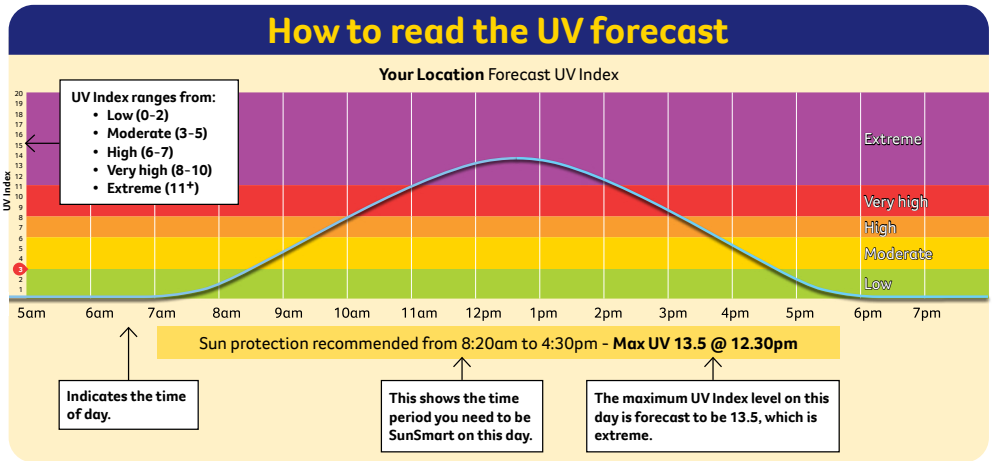
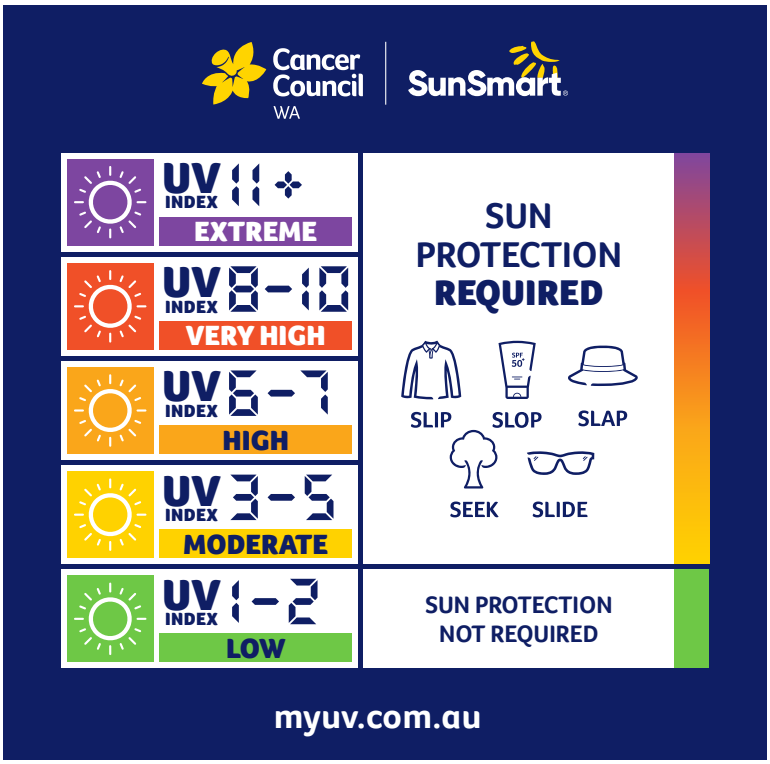


Figure 1: How to read the UV forecast

1 Olsen C, Pandeya N, Green A, Ragaini B, Venn A, Whiteman D. Keratinocyte cancer incidence in Australia: a review of population-based incidence trends and estimates of lifetime risk. Public Health Research & Practice. 2022.
2 Armstrong, B.K., How sun exposure causes skin cancer: An epidemiological perspective in prevention of skin cancer, D. Hill, M. Elwood, and D. English, Editors. 2004, Kluwer Academic Publishers: Dordrecht.
3 Armstrong, B.K., Kricker, A., How much melanoma is caused by sun exposure? Melanoma Research, 1993. 3(6): pp.395-401.
4 Stern, R.S., Weinstein, M.C., Baker, S.G. Risk reduction for non melanoma skin cancer with childhood sunscreen use. Archives of Dermatology 1986; 122: 537–45.

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 (stronger the closer you are to the equator); time of year (strongest mid-summer); time of day (strongest at solar noon); and some weather conditions such as cloud and/or ozone cover.



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 Global UV app or Widget, at the Bureau of Meteorology website or app, or at www.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 Terms 1 and 4.

Summary

The sun's ultraviolet (UV) radiation is the major cause of skin cancer. UV damage also causes sunburn, tanning, premature aging and eye damage. The good news is you can prevent damage - and skin cancer - 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 or near reflective surfaces, like snow.

Unlike the sun's heat and light, we can't see or feel UV radiation, so check the UV for your location on the free SunSmart Global UV app or on the Bureau of Meteorology website.

Concept 1: The sun and our skin

LEARNING INTENTIONS

Students will:

- know that the sun produces 3 things; heat, light and ultraviolet (UV) radiation
- understand that UV radiation is invisible and that you cannot see or feel it
- understand that too much UV radiation from the sun can cause sunburn and skin damage
- understand the need to minimise and/or avoid exposure to UV when it is at its strongest
- explain the importance of protecting their skin to avoid sunburn and long-term damage
- know that there are 5 strategies to protect your skin from the sun: Slip, Slop, Slap, Seek and Slide

OVERVIEW

Lesson 1: How The Sun Sees You

Lesson 2: My Skin Story
Activity sheet: My skin story

Lesson 3: Building a 3D Model of the Skin
Resource sheet: How UV affects the skin

Lesson 4: How Shadows Indicate the Sun's Strength

Lesson 5: Power of the Sun

USEFUL LINKS

How the sun sees you
The Science of skin- Emma Bryce TED-Ed
Too many kids going to hospital because of sunburn
ARPANSA Fitzpatrick scale
Generation SunSmart
Cancer Council Western Australia
Frequently asked questions

Lesson 1: How the Sun Sees You

Background

This lesson aims to raise awareness of the impact that harmful UV radiation has on our skin, the importance of sun protection behaviours, and the role sunscreen plays in protecting our skin. The activity involves watching a video about how an ultraviolet camera can show not-yet visible changes to your skin and then completing the 90 degrees thinking strategy. The 90 degrees thinking is a strategy that helps students to graphically organise and record ideas and information that may be seemingly unrelated and then apply these ideas and information to their own lives.

Key messages

- Australia has one of the highest rates of skin cancer in the world, with two in three people developing cancer at some time in their lives
- Research has established that childhood and adolescence are both critical periods during which sun exposure could contribute to skin cancer later in life
- Over exposure to UV radiation from the sun has been identified as the cause of most skin cancers
- UV radiation damages the DNA cells in skin cells. Damage to the skin can result in premature aging and increases the risk of developing skin cancer
- 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
- The UV forecast, not temperature should be used as a guide when assessing whether sun protection is required
- In Western Australia, the UV radiation levels are 3 and above for the majority of the year
- It is estimated that more than 75% of all skin cancers could be prevented by practicing sun protective behaviours in childhood and adolescence.

Resources

- How the sun sees you
- Blank paper

Instructions

1. Students access and view the video numerous times and ask key questions to promote discussion.
2. Distribute a sheet of blank paper and ask students to divide the page with a diagonal line from top right to bottom left.
3. In the top left-hand triangle, students record ideas or information from the video “How the Sun sees you”. Discuss as students reflect and record information or ideas.
4. In the bottom right-hand triangle, students record their feelings and what the implications of these factors or ideas may have on their own lives. Discuss and expand on information or ideas.
5. Advocating for change: Each student chooses one of the following methods of action: Create a display, write a blog, letter or opinion article, create a film, advert or drama, develop a persuasive speech, talk to decision-makers to advocate for change.
6. The task for each student is to use their delivery method to raise awareness, reduce risk and facilitate change in behaviours and attitudes.
7. At the end of each presentation, each student outlines why they think their method will work in facilitating change in behaviours and attitudes.

Key questions

- How did you feel after watching the video?
- What did you learn from the video?
- What are the implications for you?

Lesson 2: My Skin Story

Background

In this lesson, students will develop a greater understanding of their skin type as per the Fitzpatrick scale, and how to protect their skin from UV radiation. Students research the different skin phototypes using the Fitzpatrick scale definitions of skin types. The Fitzpatrick scale was developed in 1975 and is a system that classifies skin type according to the amount of pigment your skin has and your skin's reaction to sun exposure. This information can help predict your overall risk of sun damage and skin cancer.

Key messages

- The Fitzpatrick skin phototype is a commonly used system to describe a person's skin type in terms of response to ultraviolet (UV) radiation exposure
- Skin is the body's largest organ that protects our body and provides us with the sense of touch
- SPF50 or SPF50+ broad-spectrum, water-resistant sunscreen offers the best protection from damaging UV radiation when used in combination with protective clothing, hats, shade and sunglasses
- Reactions to sunscreen are rare, however Cancer Council recommends usage tests before applying any sunscreen
- The sun produces UVA (skin damage/skin cancer, aging, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth)
- Apply sunscreen by measuring 1 teaspoon per limb to clean, dry skin 20 mins before going outdoors and reapply every 2 hours or more if sweating, towel drying or swimming. Do not rub in, instead layer it on
- A sunburn is a radiation burn from the sun. The sun produces ultraviolet radiation that causes damage to the skin
- Best sun protection practices are using a combination of Slip, Slop, Slap, Seek and Slide.

Resources

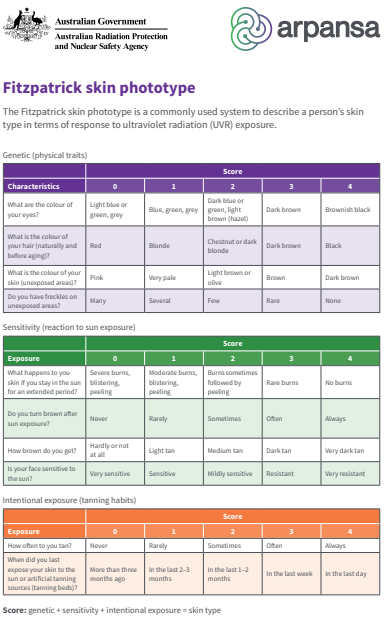
- ARPANSA Fitzpatrick scale
- The Science of skin- Emma Bryce TED-Ed
- Activity sheet: My Skin Story
- Too many kids going to hospital because of sunburn

Instructions

1. Students view The Science of Skin for background and the purpose of skin.
2. Class discussion around the video and ask some key questions.
3. Display or distribute the ARPANSA Fitzpatrick scale.
4. Introduce and discuss how the system describes a person's skin type.
5. Outline sun protection strategies including preventative measures.

Key questions

- Why do we have skin?
- Why is skin so important?
- How does the video relate to sun protection?
- What are some ways we can protect our skin?
- Why is it important to protect our skin?
- Should people with sensitive skin not wear sunscreen? Why or Why not?
- What are the recommendations for sunscreen and sensitive skin?



Australian Government
Australian Radiation Protection and Nuclear Safety Agency

arpansa

Fitzpatrick skin phototype

The Fitzpatrick skin phototype is a commonly used system to describe a person's skin type in terms of response to ultraviolet radiation (UVR) exposure.

Genetic (physical traits)

	Score				
Characteristics	**0**	**1**	**2**	**3**	**4**
What are the colour of your eyes?	Light blue or green, grey	Blue, green, grey	Dark blue or green, light brown (hazel)	Dark brown	Brownish black
What is the colour of your hair (naturally and before aging)?	Red	Blonde	Chestnut or dark blonde	Dark brown	Black
What is the colour of your skin (unexposed areas)?	Pink	Very pale	Light brown or olive	Brown	Dark brown
Do you have freckles on unexposed areas?	Many	Several	Few	Rare	None

Sensitivity (reaction to sun exposure)

	Score				
Exposure	**0**	**1**	**2**	**3**	**4**
What happens to you skin if you stay in the sun for an extended period?	Severe burns, blistering, peeling	Moderate burns, blistering, peeling	Burns sometimes followed by peeling	Rare burns	No burns
Do you turn brown after sun exposure?	Never	Rarely	Sometimes	Often	Always
How brown do you get?	Hardly or not at all	Light tan	Medium tan	Dark tan	Very dark tan
Is your face sensitive to the sun?	Very sensitive	Sensitive	Mildly sensitive	Resistant	Very resistant

Intentional exposure (tanning habits)

	Score				
Exposure	**0**	**1**	**2**	**3**	**4**
How often to you tan?	Never	Rarely	Sometimes	Often	Always
When did you last expose your skin to the sun or artificial tanning sources (tanning beds)?	More than three months ago	In the last 2–3 months	In the last 1–2 months	In the last week	In the last day

Score: genetic + sensitivity + intentional exposure = skin type

Activity Sheet: My Skin Story

Task

After viewing the Science of Skin video and Fitzpatrick skin phototype scale, compete the following questions.

Why is skin important?

Use the Fitzpatrick skin phototype system to determine your skin type.

	Genetics (physical traits)	Sensitivity (reaction)	Intentional (exposure)
Score for each question			
Score: genetic + sensitivity + intentional exposure = skin type			

What is your skin type?

What are the five ways to protect your skin?

1.

2.

3.

4.

5.

Why is it important to wear sunscreen?

Lesson 3: Building a 3D Model of the Skin

Background

This lesson is designed to consolidate and broaden knowledge and understanding about the skin and how to protect it from harmful ultraviolet (UV) radiation from the sun. Students are set with the challenge to build a 3D model of the skin using recyclable materials or air-drying clay. It provides an opportunity to better understand the layers of the skin and how UV rays penetrate the skin.

Key messages

- Skin is the body's largest organ that provides us with the sense of touch and protects our body
- Sunscreen offers protection from damaging UV when used alongside protective clothing, hats, shade and sunglasses
- Reactions to sunscreen are rare, however Cancer Council recommend usage tests before applying any sunscreen
- The sun produces UVA (skin damage/skin cancer, aging, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth)
- A sunburn is a radiation burn from the sun. The sun produces ultraviolet radiation that causes damage to the skin.

Resources

- The Science of skin- Emma Bryce TED-Ed
- Model materials: tissue box, toothpicks, pipe cleaners, cotton balls, plastic wrap, plasticine, hair drying clay or play dough and other recyclable materials.
- Resource sheet: How UV Affects the Skin

Instructions

1. Class discussion to activate prior knowledge about skin. Ask some key questions or alternatively, students can research "What is skin?"
2. Watch the video and discuss what they know about the layers of the skin.
3. Review layers of skin infographic and how UVA and UVB rays impact the skin.
4. Plan: Explain to students that they will be creating 3D models of the skin. Students research how to make a 3D model of the skin.
5. Brainstorm materials that could be used to build skin models.
6. Divide students into pairs to sketch their model designs.
7. Make a final list of required materials. Students bring items from home on the day of the project.
8. Create and construct: Students build their designs ensuring each model is labelled accurately and shows how UV rays penetrate the skin.

Key questions

- What do you know about skin?
- What is the purpose of skin? Why do we have skin?
- Why is skin so important?
- How do we care for our skin?
- What are some ways we can protect our skin?
- Why is it important to protect our skin?

Extension

- Report writing - students create a report that consolidates their understanding of what the skin does, how the sun can affect the skin, and how we can stay healthy by protecting our skin.

HOW UV AFFECTS THE SKIN

WHEN PROTECTING YOUR SKIN, THINK UV NOT HEAT

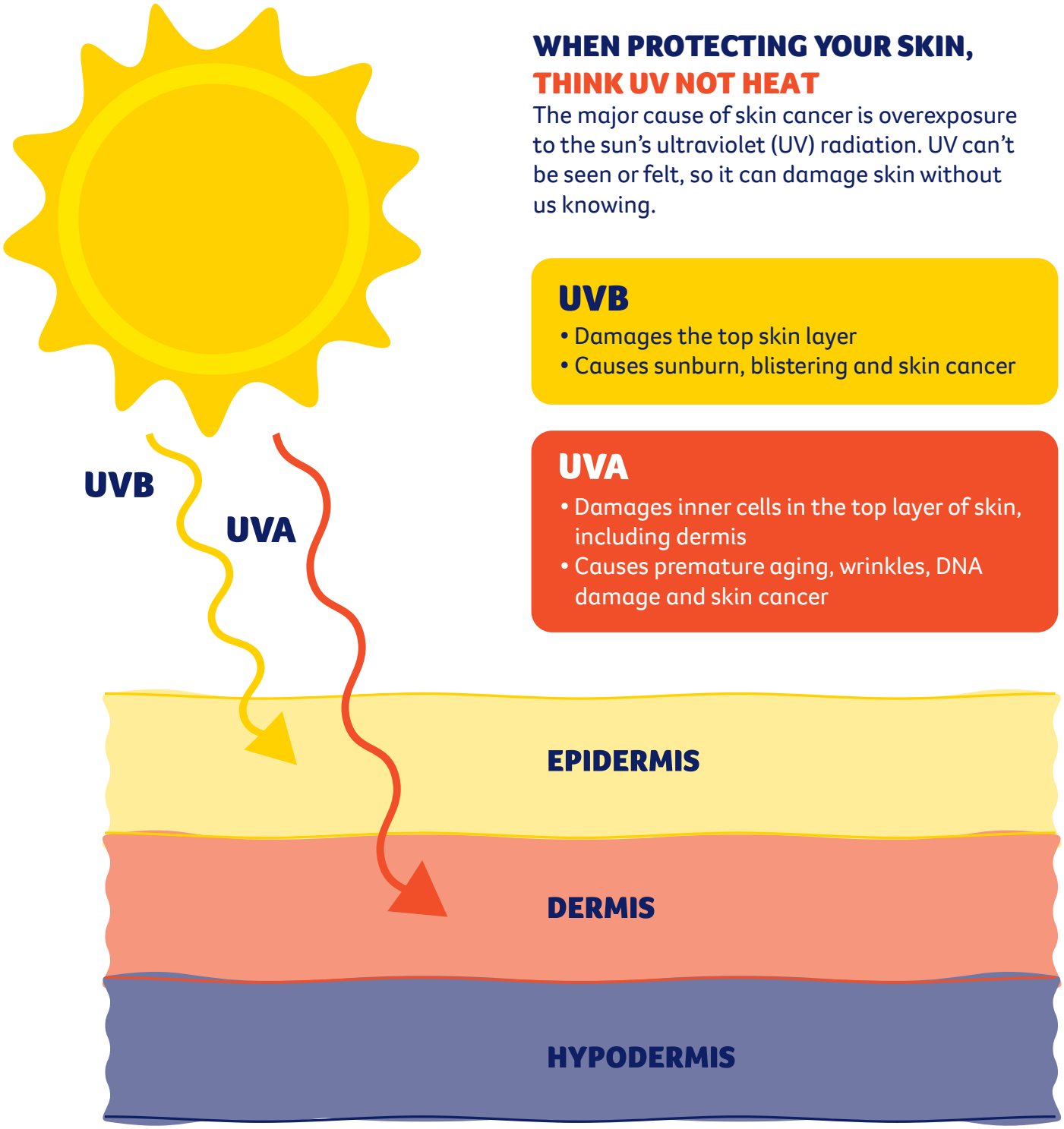
The major cause of skin cancer is overexposure to the sun's ultraviolet (UV) radiation. UV can't be seen or felt, so it can damage skin without us knowing.

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



Lesson 4: How Shadows Indicate the Sun's Strength

Background

Students will conduct an experiment to observe how shadows appear at different times of the day. The aim of the activity is to make connections between shadow length and the strength of ultraviolet (UV) radiation. Students will learn how shadow lengths vary at different times of the day and indicate when the sun's rays are most harmful.

Key messages

- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface. The UV Index describes the intensity of UV radiation
- The sun produces heat that we can feel and light that we can see. It also produces ultraviolet (UV) radiation that we cannot see or feel
- UV levels gradually increase from sunrise and peaks at solar noon on a clear sky day. Solar noon is the point at which the sun is directly overhead. UV levels then decline until sunset
- The lengths of shadows can determine when UV rays are most harmful. During early morning and late afternoon, shadows are longer. During the midday hours (10 a.m. to 3 p.m.), the sun is directly overhead, and shadows are shorter (or there is no shadow). UV rays are more intense and harmful at this time.

Resources

- Activity sheet: My Shadow Observations
- Metre rulers or measuring tape
- Yarn or string and tape for measuring shadows
- Sidewalk chalk
- www.myuv.com.au

Instructions

1. Activate prior knowledge and ask key questions to promote class discussion about UV and the sun.
2. Select the method students will use to measure their shadows.
    - Rulers: Mark the place where students stand with chalk and have their partner mark the top of their shadow with chalk. Use rulers to measure the distance between chalk markings.
    - String: Provide students with a long piece of string and two pieces of tape. The student creating the shadow will tape one end of the string where he/she is standing, while their partner will tape the string at the other end of the shadow. Measure the distance between tape marks.
3. Students complete the first five columns on the activity sheet and record their height.
4. Students measure their shadows and complete the shadow component of the activity sheet.
5. Review results and prompt class discussion to explain what they observed about shadows.
6. Students write a report to support their findings.
7. The report should include their observations and explanations with charts to support findings.

Key questions

- What do you know about UV and the sun?
- When is the sun's UV radiation at its most harmful?
- What did you notice with your shadow at different times of the day?
- What did you learn from this experiment?

When completing activities and lessons outdoors when the UV Index is 3 or above, please remember to be SunSmart

Activity Sheet: My Shadow Observations

Task

Conduct an experiment to observe how shadows appear at different times of the day.
Record your results below and answer the following questions.

My Height: _____

Before completing the experiment, fill in the shadow prediction column.

Measure control points	Day Date	Time	Weather conditions	UV Index	Shadow prediction *Short, long, same, no shadow*	Shadow measure
Morning 9am – 10am						
Lunchtime 12pm						
Afternoon 2pm-3pm						

What did you notice?

When would the sun's UV rays be most harmful?

If the shadows were measured between 4pm-5pm, would the shadows or level of UV change? Explain

When completing activities and lessons outdoors when the UV Index is 3 or above, please remember to be SunSmart

Lesson 5: Power of the Sun

Background

Students can create wonderful artwork using the power of the sun, while learning about the harmful effects of ultraviolet (UV) radiation. The sun produces 3 things; heat that you can feel, light you can see and UV that you cannot see or feel. UVB is known to cause sunburn and contribute to skin cancer risk, and UVA penetrates to the deeper layers of skin and can also contribute to skin cancer from DNA damage. This activity demonstrates to students how sunscreen, or protective clothing counteracts or screens the effects of UV radiation.

Key messages

- We often check the weather forecast, but it is also important to check the daily UV Index to protect our skin from UV radiation
- When the UV Index is 3 or above, sun protection is required
- UV radiation is invisible, you cannot see or feel it
- UV and heat are not the same thing, it's not only when it is hot that we need to use sun protection.
- The UV index can be 3 or above when it is cool and cloudy too
- UV radiation can bounce and reflect off surfaces, so it is important to use a combination of sun protection: Slip, Slop, Slap, Seek and Slide
- When UV levels are at their peak, minimise time outdoors during these times.

Resources

- UV photo-sensitive paper (Sunprint Kit-available online)
- Sunscreen
- Cotton tips (for applying sunscreen)
- Cardboard cut to size (for stability)
- Clear zip-lock bag or plastic sleeve
- Bowl of water
- Timer

Instructions

1. Apply the sunscreen onto plastic sleeve using your finger or cotton tip. Be careful the sunscreen is kept within the border of the Sunprint paper.
2. Assemble in order: cardboard, Sunprint paper, acrylic sheet and sunscreen on plastic sleeve.
3. Expose to the sun until paper turns almost white, from 1-5 minutes depending on the sunlight. Be careful not to overexpose the paper.
4. Quickly rinse the Sunprint paper with water for about 1 minute and dry flat. The paper may appear very white at first, but as the paper dries the blue paper and white print becomes brighter and clearer.

Key questions

- Why do you think the paper changed colour?
- What is UV radiation?
- What are some ways we can protect our skin?
- Why is it important to protect our skin?
- What does the UV Index tell us?

Variations

- Experiment by testing sunscreen with different Sun Protection Factor (SPF)
- Use objects such as leaves, flowers or feathers
- Experiment using a UV torch on the paper rather than natural sun light
- Frame the artwork using pop sticks or balsa wood glued together along the border.

Concept 2: Heat and UV from the sun: What's the difference?

LEARNING INTENTIONS

Students will:

- consolidate and understand that the sun gives off energy that we can see (visible light), heat that we can feel, as well as an invisible energy that we cannot see or feel ultraviolet (UV) radiation
- observe the effects of UV radiation
- understand that too much sun can hurt their skin
- consolidate that there is a difference between UV and heat
- understand that too much exposure to UV radiation can cause sunburn, skin damage and possibly skin cancer later in life
- develop an understanding of how to protect their bodies from the harmful effects of UV radiation
- explore and demonstrate the effects of UV radiation on reactive objects
- understand the need to minimise and/or avoid exposure to the sun when UV is at its strongest or peak times of the day
- understand the need to protect their skin when the UV Index is 3 or above.

OVERVIEW

Lesson 1: The UV Index Explained
Activity sheet: The 4 C's Template

Lesson 2: UV Views: Continuum
Resource sheet: SunSmart Statement Prompts
Resource sheet: True or False Statements

Lesson 3: Shining the Light on UV

Lesson 4: The World in UV (Perception and Reality)
Activity sheet: The World in UV Concept Map

Lesson 5: Making UV Visible: Glowing Water

Lesson 6: SunSmart board game

Lesson 7: Let's PEEL Back a Myth
Activity sheet: PEEL Paragraph Template

Lesson 8: SunSmart Global UV app
Activity sheet: SunSmart Daily UV Record Sheets

Lesson 9: SunSmart Accessories
Activity sheet: Design a UV Detection Accessory

Lesson 10: Design a UV Meter
Activity sheet: Design a UV Meter Planning Sheet

USEFUL LINKS

When the UV hits 3 or above you need to be SunSmart
How to read the daily UV forecast poster
UV Index Poster- write in the daily sun protection times and maximum UV
www.myuv.com.au
Be SunSmart - Cancer Council Australia
SunSmart Global UV app
The World in UV
Science questions
Science Kids
SunSmart board game and game questions

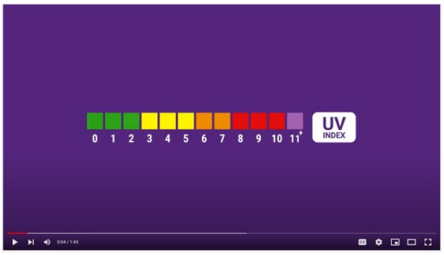
Lesson 1: The UV Index Explained

Background

The lesson aims to consolidate and extend students' awareness around the effects of ultraviolet (UV) radiation from the sun and how to protect their skin. The 4 E's provides students with a structure for a text-based discussion built around making connections, asking questions, identifying key ideas and considering application. Students complete a 4 C's Visible Thinking Routine strategy: connect, challenge, concept and changes.

Key messages

- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface. The UV Index is a way of describing the intensity of UV radiation
- The sun produces heat that we can feel and light that we can see. It also produces ultraviolet (UV) radiation that we cannot see or feel
- The sun produces UVA (skin damage/skin cancer, aging, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth)
- When the UV Index is 3 or above, sun protection is required
- UV and heat are not the same thing
- The UV index can be 3 or above when it is cool and cloudy
- UV radiation can bounce and reflect off surfaces, so it is important to use all five forms of sun protection. Slip, Slop, Slap, Seek and Slide.



Resources

- The UV Index explained
- Activity sheet: 4Cs Template
- How to read the daily UV forecast poster
- www.myuv.com.au

Instructions

1. Activate prior knowledge through class discussion and key questions.
2. View the UV Index video and record notes for further discussion.
3. Apply findings using the 4 C's visible thinking strategy.
4. Connect: What connections can you draw between the research and your own understanding of UV radiation?
5. Challenge: What ideas or statements do you want to challenge or argue with from the information?
6. Concepts: What key concepts or ideas do you think are important and worth using if you were planning for an improved environment?
7. Changes: What changes in attitudes, thinking, or actions are suggested by the video that could help communities have healthier environmental outcomes?
8. Can students explain how scientific knowledge helps us to solve problems and inform decisions?

Key questions

- What is the UV Index?
- What does the UV Index tell us?
- What is the difference between UV radiation and heat?
- What factors affect the UV levels?
- Where can you find information about the UV Index forecast?
- When is UV at its highest during the day?
- What are some ways we can protect our skin?

The 4 C's

Connect

What connections do you draw between the research and your own understanding of UV radiation?

Challenge

What ideas of statements do you want to challenge or argue with in the information?

Concept

What key concepts or ideas do you think are important and worth using if you were planning for an improved environment?

Changes

What changes in attitudes, thinking or actions are suggested by the video that could help communities have healthier environmental outcomes?

Lesson 2: UV Views: Continuum

Background

This activity aims to foster more effective sun protection habits as part of a comprehensive approach to skin cancer prevention. It involves creating a physical continuum with three main points, agree (one end), unsure (middle) and disagree (opposite end to agree). A series of sun protection statements are read to students to challenge their views and opinions around sun protection concepts.

Key messages

- There are many different health messages that can influence our health decisions and behaviours
- Make informed decisions and choose a course of action that avoids risks and reduces harm
- Look for information from credible sources to make informed decisions around sun protection
- Challenge viewpoints and question information and seek evidence from a credible source
- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface
- The sun produces heat that we can feel and light that we can see. It also produces ultraviolet (UV) radiation that we cannot see or feel
- A sunburn is a radiation burn from the sun
- The sun produces ultraviolet (UV) radiation that causes damage to the skin
- When the UV Index is 3 or above, sun protection is required
- UV and heat are not the same thing
- The UV index can be 3 or above when it is cool and cloudy.

Resources

- Resource sheet: SunSmart Prompts
- Resource sheet: SunSmart True or False
- Be SunSmart - Cancer Council Australia
- How to read the UV forecast poster
- www.myuv.com.au

Instructions

1. Determine a space for a continuum with three main points, agree (one end), unsure (middle) and disagree (opposite end to agree).
2. Ask key questions to activate prior knowledge and generate discussion.
3. Read the first statement.
4. Students move along the continuum to express their view, opinion and level of understanding.
5. Repeat steps 3 and 4 for other statements.
6. Discuss whether the statement is true or false and further discuss any misconceptions.
7. Ask key questions to debrief activity.

Key questions

- What is UV?
- Why is it important to be aware of the UV Index?
- Why do you think false information is shared online?
- How do you know if the information is correct and factual?
- Why is it important to seek the truth and question things?
- Were there any statements that surprised you?
- What new information did you learn?
- What can we as a class do to change views and educate?

SunSmart Statement Prompts

Myth	Fact
Wearing water-resistant sunscreen means you don't have to reapply it	Many teenagers incorrectly believe a tan is healthy
Sunscreen provides enough sun protection	62% of children between 12-17 years report that their friends think a healthy tan is a good thing
Skin cancer is caused by sunburn	Australia has one of the highest rates of skin cancer in the world
Sun damage is not possible on windy, cloudy or cool days	Australia is the skin cancer capital of the world
A fake tan darkens the skin, protecting the skin from the sun	Two in three Australians will develop skin cancer in their lifetime, and every year 2,000 people die from this disease
If you tan but don't burn, you don't need to bother with sun protection	Being SunSmart is a simple and effective way of reducing your risk of developing skin cancer
If your cosmetics contain sunscreen, you do not need to use sunscreen	Most skin cancers can be treated if found early
Using fake tan means you don't need sun protection	It is important that you learn how to check your skin for the early signs of skin cancer.
A tan is healthy	
A tan that builds up over summer isn't dangerous	
You can't get sunburnt in the shade	

Activity Sheet: SunSmart True or False

There are many different messages and information that can influence our health decisions and behaviours.
It is important to make informed decisions and choose a course of action that avoids risks and reduces harm.

Statement	True or False	Explained
It can take only 15 minutes for UV radiation to burn skin.	True	The time to burn can vary by skin type, but at a high UV level it is approximately 15 to 25 minutes. A UV Index reading of 3 or above puts you at a very high risk of harm from unprotected sun exposure. Take extra precautions for both your skin and eyes because damage occurs quickly, typically within 15 minutes.
The amount of UV reaching the Earth is always the same everywhere.	False	The amount of UV radiation reaching the Earth's surface varies widely around the globe. Several factors account for this variation at any given location, including cloud cover or haze, time of the year and time of day, altitude, latitude, ozone and ground reflection.
Ultraviolet (UV) radiation from the sun can't be seen or felt.	True	The sun sends energy to Earth in a few different ways: visible light that you can see, infrared radiation that you feel as heat, and rays of UV radiation that you can't see or feel.
UV can damage all skin types.	True	Your skin type and natural skin colour determine how susceptible you are to sunburn. When it comes to sunburn, moderately pigmented and darkly pigmented skin can stand more UV exposure compared to those with fair skin. So the lighter your skin, the more easily you'll burn.
You need to apply sunscreen only when it is hot.	False	UV radiation is not only present on warm days. Sun protection needs to be front of mind each and every day. When the UV Index is 3 or above, you need to use a combination of sun protection, Slip, Slop, Slap, Seek and Slide. You need to apply sunscreen every two hours and more often if sweating, towel drying or swimming.
Sunburn is a radiation burn.	True	Sunburn is a form of radiation burn that affects living tissue, such as skin, that results from an overexposure to ultraviolet (UV) radiation, usually from the sun.
You can get sunburned on a cold or cloudy day.	True	You can get sun damage on windy, cloudy and cool days. Sun damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day in summer can have similar UV levels to a warm, sunny day.
You don't need sun protection in winter.	False	You can get sun damage in winter and on windy, cloudy and cool days. Sun damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day in summer can have similar UV levels to a warm, sunny day.
Australia has one of the highest rates of skin cancer in the world.	True	Australia has one of the highest rates of skin cancer in the world. This is largely due to our climate, the fact that many of us have fair skin that isn't really suited to such harsh conditions, our proximity to the equator (high UV levels) and our social attitudes and love for the outdoors. Anyone can be at risk of developing skin cancer, though the risk increases as you get older. The majority of skin cancers in Australia are caused by exposure to UV radiation in sunlight.

Statement	True or False	Explained
Windburn is different to sunburn.	False	You can get sun damage on windy, cloudy and cool days. Sun damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day in summer can have similar UV levels to a warm, sunny day. If it's windy and you get a red face, it's likely to be sunburn. There's no such thing as 'windburn'
The weather forecast tomorrow is 19 degrees, so I won't need sun protection.	False	You can get sun damage on windy, cloudy and cool days. Sun damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day in summer can have similar UV levels to a warm, sunny day
Sun protection is required when the UV Index is 8 or above.	False	When the UV Index is 3 or above sun protection is required. When the UV Index is 8 or above, it is recommended to avoid being outside during midday hours. Make sure you seek shade! Sun protective clothing, sunscreen, sunglasses and a hat is a must!
A cap is a SunSmart hat!	False	Broad-brimmed, bucket and legionnaire hats are SunSmart because they cover the neck, face, ears and head. Caps do not provide protection to all these areas are therefore not SunSmart.
I only own a cap, that is better than no hat at all.	False	A cap is not better than no hat at all because skin is exposed to UV radiation causing skin damage. If you only have cap, seeking shade, applying sunscreen and covering the skin is the best option.
Sunscreen labelled broad-spectrum is the best sunscreen to use.	True	Broad spectrum sunscreen offers the best protection because it protects the skin from both UVA and UVB rays. Sunscreen SPF (sun protection factor) 50 or SPF50+ is best.
Wearing a broad-brimmed hat will protect my eyes from UV radiation.	True	To protect the skin and eyes from UV radiation, Cancer Council recommends wearing a hat that shades the face, back of the next, eyes and ears. These areas are common sites for both skin damage and skin cancers. Wearing a hat with a brim that shades the eyes can reduce UV radiation to the eyes by 50%. Wearing close fitting sunglasses can also provide protection to the eyes.
I have put on sunscreen, so I do not need to wear a hat or long sleeve shirt!	False	UV radiation can bounce and reflect off surfaces, so it is important to use a combination of sun protection, Slip, Slop, Slap, Seek and Slide.
None of my friends wear a hat, so I don't have to!	False	Role model, healthy lifestyle choices for older children (high school).
Skin has a memory	True	Even though on the surface skin may appear to have healed from a sunburn, damage to the skin cells remain.
In most parts of Australia, the UV Index reaches 11 or more in the summer	True	Daily UV levels peak around midday and on clear days, are forecast to be extreme across Australia in the summer months.
You get sunburnt fastest when your shadow is shortest.	True	When the UV is high, the sun is also high causing it to cast a shorter shadow.
UV levels are just as strong in the morning as they are in the afternoon.	False	On a clear day the UV level will be the same 3 hours before midday and 3 hours after midday.
UV radiation is invisible and can't be felt.	True	Heat is caused by infrared radiation, not UV radiation.

Statement	True or False	Explained
UV peaks at midday even though the temperatures continue to rise in the afternoon.	True	UV radiation is not dependent on heat - you can have high UV even on a cool or cloudy day.
If I am wearing a hat, I don't need to apply sunscreen to my face.	False	Best sun protection practices are using a combination of Slip, Slop, Slap, Seek and Slide. UV radiation can reflect and bounce off different surfaces such as water, snow, sand, concrete and painted walls. Wearing a hat will protect your face from UV radiation from above but not reflective UV off different surfaces.
Broad spectrum sunscreen means that people with a broad range of skin types can use this sunscreen.	False	Broad spectrum sunscreen offers the best protection because it protects the skin from both UVA and UVB rays.
I can't use sunscreen because I have sensitive skin.	False	Reactions to sunscreen are rare and can be a result of a sensitivity or allergy to any of the many ingredients used in these products. Some people may have a reaction to a fragrance, preservative, UV absorber or another component of the sunscreen. Reactions occur in a very low proportion of the population – fewer than 1% of all users. Although reactions are uncommon, Cancer Council recommends performing a usage test before applying any sunscreen, where a small amount of the product is applied on the inside of the forearm for a few days to check if the skin reacts, prior to applying it to the rest of the body.
One teaspoons of sunscreen should be applied per limb.	True	Apply sunscreen generously and reapply every 2 hours, layer it and do not rub it in. Apply to clean, dry skin 20 mins before going outdoors and reapply every 2 hours or more if sweating, towel drying or swimming.
Sunscreen never expires!	False	Check the expiry date and storage conditions on the label. Most sunscreens have a shelf life of about three years. Sunscreen should be stored below 30°C. If left in excessive heat (e.g. in the glove box of a hot car or in the sun on the beach), over time, the product may not be effective.
Sunscreen is not safe to use.	False	Sunscreens are regulated in Australia by the TGA to ensure they are safe and effective. As a therapeutic product, sunscreen must be used as directed to help provide effective protection from UV. Always use sunscreen with other sun protection measures (hat, clothing, shade and sunglasses). There is clear evidence that regular use of sunscreen helps to prevent skin cancer. Long term studies of sunscreen use in Australia have found no harmful effects of regular use.
SPF stands for Sun Protection Factor.	True	Broad spectrum, water-resistant sunscreen with an SPF50 or SPF50+ is best.
The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the Earth's surface.	True	A daily time period shows the strength of UV levels and peaks normally at solar noon on a clear sky day. Solar noon is the point at which the sun is directly overhead. When UV levels are at their peak, minimise time outdoors during these times.

Lesson 3: Shining the Light on UV

Background

This simple handprint art activity demonstrates how sunscreen can provide protection from UV radiation from the sun. Students experiment with dark coloured paper, ultraviolet light and sunscreen. Sunscreen contains ingredients that can reflect and absorb ultraviolet light, which keeps the ultraviolet light from reaching and damaging skins cells.

Key messages

- Ultraviolet (UV) radiation is invisible, you cannot see or feel it. When the UV Index is 3 or above, sun protection is required
- UV and heat are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy
- Sunscreen not only reduces the risk of skin cancer and sunburn, it also decreases the effects of ageing on the skin from the sun
- When applied as directed, SPF50 or SPF50+ sunscreen reflects or filters over 98% of UV radiation
- Broad spectrum sunscreen protects the skin from both UVA and UVB rays
- It is recommended that sunscreen is applied 20 minutes before going out in the sun. This allows the sunscreen time to bond properly to the skin
- Reapply sunscreen every 2 hours or more often if swimming, sweating, or towelling off
- SPF stands for Sun Protection Factor. Water resistant SPF50 or SPF50+ sunscreen is recommended.

Resources

- Construction paper (dark, bold colours such as red or green)
- Sunscreen (SPF50 or SPF50+ and doesn't contain metal oxides)
- Handprints and sunny spot outside
- Resource sheet: How Sunscreen Works
- Correct sunscreen application poster
- Tips for sunscreen use
- How the sun sees you

Instructions

1. Squirt a small amount of sunscreen onto one hand and spread evenly over the palm and fingers (don't rub in).
2. Allow the sunscreen to absorb into the skin.
3. Press down all fingers and palms firmly onto the construction paper.
4. Place paper outside in direct sunlight for 3-4 hours. If it is windy, secure the paper with small rocks.
5. Observations and discussion about results. The sun's UV rays have faded the colour of the paper and the sunscreen handprints has protected the original colour.
6. Repeat using another substance such as normal hand cream.
7. Students write about their observations and findings.

Extension

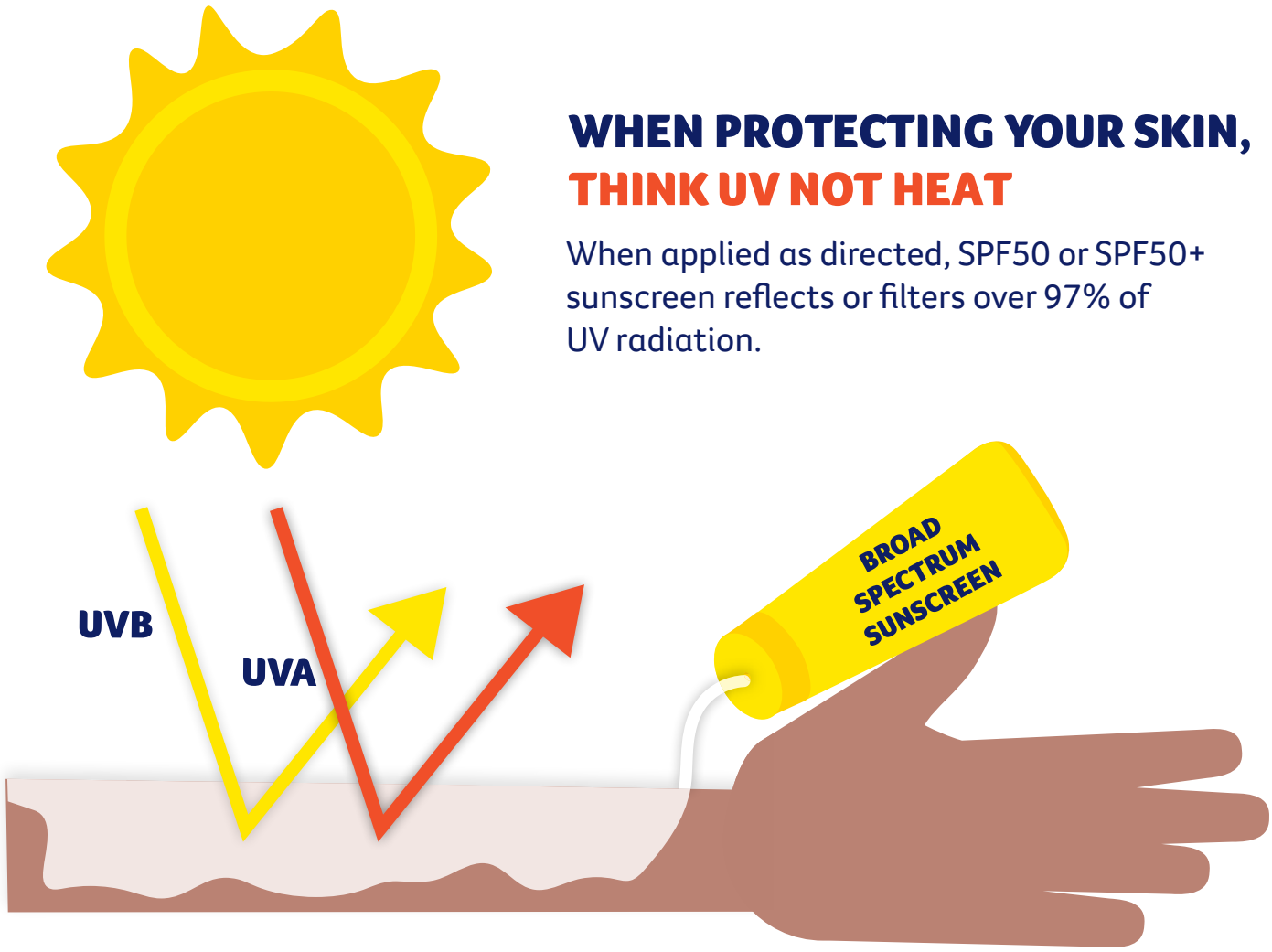
- Replace the handprints with other small heavy objects such as rocks or figurines. This demonstrates the importance of wearing sun protective clothing and shade.

Key questions

- What is UV?
- Why do you think the paper changed colour? What does this mean?
- What are some ways we can protect our skin?
- Why is it important to protect our skin?

When completing activities and lessons outdoors when the UV Index is 3 or above, please remember to be SunSmart

How Sunscreen Works.



WHEN PROTECTING YOUR SKIN, THINK UV NOT HEAT

When applied as directed, SPF50 or SPF50+ sunscreen reflects or filters over 97% of UV radiation.

Lesson 4: The World in UV (Perception and Reality)

Background

This lesson aims to consolidate and extend student knowledge about ultraviolet (UV) radiation and the importance of sun protection. Students view a video that explains UV cameras and how they expose a hidden world and reveal the incompleteness of our perception. Students complete a World in UV concept map.

Key messages

- The sun produces heat that we can feel and light that we can see. It also produces ultraviolet (UV) radiation that we cannot see or feel
- The sun produces UVA (skin damage/skin cancer, ageing, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth)
- When the UV Index is 3 or above, sun protection is required
- UV and heat are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy too
- UV radiation can bounce and reflect off surfaces, so it is important to use all five forms of sun protection. Slip, Slop, Slap, Seek and Slide
- Sunscreen not only reduces the risk of skin cancer and sunburn, it also decreases the effects of ageing on the skin from the sun
- Broad spectrum sunscreen protects the skin from both UVA and UVB rays.

Resources

- The World in UV
- www.myuv.com.au
- Activity sheet: The World in UV Concept Map

Instructions

1. Activate prior knowledge of UV and ask key questions to prompt discussion.
2. Watch The World in UV and make notes.
3. Replay the video and prompt discussion.
4. Brainstorm key points, topics and ideas together on whiteboard.
5. Distribute the concept map or provide students with paper to develop their own.
6. Develop their concept map using the brainstorm and key questions to prompt sub-topics.
7. Share their concept maps, including any new ideas or topics.

Key questions

- What does UV stand for? What is UV?
- What do you know about UV?
- How does UV affect us?
- How do I protect against UV?
- Is UV invisible? Can it travel through materials?
- Is UV the same as heat?

The world in UV Concept Map

Lesson 5: Making UV Visible: Glowing Water

Background

This lesson provides students with the opportunity to further explore ultraviolet (UV) radiation. It can be used as a follow on or extension lesson to lesson 4. This experiment simulates what UV light would look like using a bottle of tonic water and a highlighter pen.

Key messages

- Ultraviolet light interacts differently with matter for a number of reasons:
  - Some pigments selectively absorb UV so they may appear white in the visible but dark in the UV. The pigments usually dissipate the UV energy as heat, though the breaking of bonds can also occur
  - Fluorescent molecules absorb UV light and re-radiate that energy as visible light. This makes them look dark in the UV but glowing under black light
- Tonic water and highlighters glow under black light because they contain fluorescent chemicals. It contains phosphors that turns UV light (light we can't see) into visible light (light we can see). These chemicals absorb light and then release it back
- In this case they absorb highly energetic invisible UV light and release less energetic but visible light. The water is transparent, so it is easy to colour with these glowing chemicals. The glowing water can be reused again and again and will never lose its glow.

Resources

- The World in UV
- Science questions website
- Science kids' website
- Dark room to conduct experiment
- Tonic water
- Yellow highlighter
- Clear glass or container
- Black light or UV light

Instructions

1. Make predictions about the scientific investigation and answer the following question
   - What will happen when we place UV light on a glass of tonic water with highlighter dye in a dark room? Record predictions in exercise book.
2. Remove the back of a highlighter and pour some tonic water into the glass or container.
3. Take the ink-soaked felt out of the pen and soak it in the container of tonic water for an hour or so. Squeeze the felt until almost all the ink has been transferred to the tonic water.
4. Place the container in a dark room.
5. Place the black light (long wave ultraviolet light) near the glass of tonic water and turn on the switch. The water will glow an eerie green.
6. Prompt discussion and ask key questions. Simple explanation: The dye from the highlighters placed in the tonic water contain phosphors that turn UV light (light we can't see) into visible light (light we can see).
7. Explore and explain: Students communicate their ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts.
8. Students present their findings to the class.

Key questions

- What will happen when we place UV light on a glass of tonic water with highlighter dye in a dark room?
- What do you see? Why do you think this is happening?
- How can we incorporate and use the SunSmart Global UV app into our daily routines?

Lesson 6: SunSmart Board Game

Background

Students design and construct a SunSmart board game. In doing so, they conceptualise a board game, focused on facts, myths and misconceptions about UV and sun protection. The board game must have a sun safety theme and educate the importance of sun protection. Students are encouraged to show awareness of sun safety in multiple scenarios within the game, such as sport, leisure and social situations.

Key messages

- Ultraviolet (UV) radiation is invisible, you cannot see or feel it. We can see its effects though
- If the UV Index is 3 or above, it can cause sunburn and skin damage
- Overexposure to UV radiation is the major cause of skin cancer
- Childhood and adolescence are critical periods during which overexposure to UV increases the risk of skin cancers
- later in life
- The sun produces UVA (skin damage/skin cancer, ageing, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth)
- UV damage is preventable by using five forms of sun protection - Slip on protective clothing, Slop on sunscreen, Slap on a broad-brimmed hat, Seek shade and Slide on sunglasses.

Resources

- Generation SunSmart
- SunSmart - Cancer Council WA
- SunSmart board game sample questions
- Range of art and craft materials
- Colouring markers
- Glue and scissors

Instructions

1. Discuss and recall sun protection prior knowledge using key questions.
2. Students research popular board games and discuss how they could be adapted to incorporate a SunSmart theme. See example resource SunSmart board game and game questions.
3. Plan a design, concept and goal of the game. Consider the player age and year level.
4. Research sun protection questions and answers using the websites.
5. Share board game designs and include discussion with constructive feedback.
   - How are you going to use the board game to educate about UV protection?
   - How could you improve your SunSmart board game?
6. Return to groups and make any updates, changes or improvements to their board game.
7. Construct their SunSmart board game using a range of art and craft materials.
8. Swap board games between groups or visit a 'buddy' class to play the game.

Key questions

- What do you know about UV radiation and the UV Index?
- How can the UV Index be helpful?
- What are the short-term and long-term risks of not using UV protection?
- What are the sun protection strategies?

Lesson 7: Let's PEEL Back a Myth

Background

This lesson encourages critical thinking strategies and challenges students' point of view around protecting our skin, sun protection, sunscreen and ultraviolet (UV) radiation. Students consolidate and extend their SunSmart knowledge while learning and/or practicing writing paragraphs using the PEEL method.

The PEEL paragraph method is a technique used in writing to help structure paragraphs in a way that presents a single clear and focused argument:

- **P= Point:** Make your point – start your paragraph by stating your point
- **E = Evidence/Example:** Back it up and support your point with evidence and examples
- **E = Explanation:** Explain in more detail how the evidence supports your point
- **L = Link:** Link this point to the next point.

Key messages

- There are many different messages and information that can influence our health decisions and behaviours. It is important to make informed decisions and choose a course of action that avoids risks and reduces harm
- Look for information from credible sources to make informed decisions around sun protection
- It is important to challenge viewpoints, question information and seek evidence from a credible source.

Resources

- Be SunSmart - Cancer Council Australia
- Generation SunSmart
- SunSmart - Cancer Council WA
- PEEL paragraphs
- Activity sheet: Peel Paragraph Template

Instructions

1. Activate prior knowledge by asking key questions.
2. Students research facts and interesting information about the sun and ultraviolet (UV) radiation, ensuring that information is gathered from a credible source. Student may like to make notes in their exercise books or lined paper.
3. Select an element, fact or understanding of sun protection or UV radiation.
4. Using the PEEL paragraph template, discuss and create notes about the selected element or fact under each heading.
5. Develop a paragraph in exercise books using the PEEL paragraph template and notes.
6. Present or share paragraph with the class and discuss.

Key questions

- How do you know if you are visiting a credible website with factual information?
- What positive actions you can take in your own life to minimise the effects of each fact?
- What are some actions or solutions to health issues that are related to UV radiation exposure?
- Why do you think there is some false information available around UV protection?

P	E	E	L
Point	**Evidence/Example**	**Explanation**	**Link**
Make your point – start your paragraph by stating your point	*Back it up and support your point with evidence and examples*	*Explain in more detail how the evidence supports your point.*	*Link this point to the next point*

Lesson 8: SunSmart Global UV app

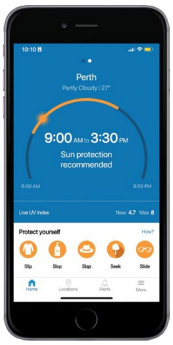
Background

This lesson is designed to consolidate students' understanding about the difference between ultraviolet (UV) radiation and heat. It enables students to develop the knowledge and information to make informed decisions and healthy lifestyle choices around skin protection. It also distinguishes the difference between temperature and the UV Index through comparing the UV Index and weather forecast in different locations throughout Australia. Students use the free SunSmart Global UV app to gather information. It tells you when sun protection is recommended for your location (and other areas) using forecast information from the Bureau of Meteorology website and live UV data from ARPANSA.

NOTE: the SunSmart Global UV app uses real-time UV readings at locations within a 100km radius of an ARPANSA monitoring station, which are located in high population areas. In Western Australia, that location is in Perth. Locations outside of the Perth area will be shown as clear sky UV forecasts.

Key messages

- Be informed and check the UV Index daily so sun protection measures can be made to protect our skin from UV radiation
- When the UV Index is 3 or above, sun protection is required
- UV radiation is invisible, you cannot see or feel it
- UV and heat are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy
- UV radiation can bounce and reflect off surfaces, so it is important to use all five forms of sun protection. Slip, Slop, Slap, Seek and Slide
- When UV levels are at their peak, minimise time outdoors when possible.



Resources

- www.myuv.com.au
- SunSmart Global UV app
- School device or interactive board
- How to read the daily UV forecast
- Activity sheet: SunSmart Global UV app

Instructions

1. Display the SunSmart Global UV app or alternatively students can access the app on their own device.
2. Explore and discuss how the Global SunSmart UV app works, its functions and key questions.
3. Distribute activity sheet.
4. Record the UV app readings at targeted points during the day and week for your local area and two other locations throughout Australia.
5. Using this data, plot results on a graph and answer questions to evaluate the data.
6. Students chart findings, display findings in a graph and complete questions on activity sheet.
7. Class discussion, summarise activity, findings and key questions.

Key questions

- What is UV radiation?
- What are some ways we can protect our skin?
- Why is it important to protect our skin?
- What does the UV Index tell us?
- How can we incorporate and use the free SunSmart Global UV app into our daily routines?
- What do you think effects the UV forecast in different locations, such as Albany and Broome?

Extension

- Put the SunSmart widget on your school website. Visit myUV.com.au to find out how.
- Repeat the activity again at a different time of the year such as winter and summer. Compare results.

Activity Sheet: SunSmart Global UV app

Task

You are to access the SunSmart Global UV app and plot results in different locations throughout the state or country. Plot data on a graph and analyse results.

Record the UV index in your area and two other locations within the state or country at 9am and 1pm for a week.

Time and day	UV Index: Your local area:	Weather conditions. Temperature forecast.	UV Index: Other location:	Weather conditions. Temperature forecast.	UV Index: Other location:	Weather conditions. Temperature forecast.
Monday 9am						
Monday 1pm						
Tuesday 9am						
Tuesday 1pm						
Wednesday 9am						
Wednesday 1pm						
Thursday 9am						
Thursday 1pm						
Friday 9am						
Friday 1pm						

Use the collected data to compile information into a line graph to show differences in UV Index in multiple locations throughout Australia. Use the space below or a provided piece of graph paper.

In your own words, describe your findings.

Discuss with your partner and use the SunSmart Global UV app to describe why the UV changes at the same time in different locations.

Use the SunSmart Global UV app to find two other interesting facts about UV

Lesson 9: SunSmart Accessories

Background

This lesson is designed to consolidate students' understanding about the difference between ultraviolet (UV) radiation and heat. Students research, plan, develop and create a SunSmart accessory (hat, jewellery, or arm band) that acts as a reminder to use sun protection. All accessories created by students must include UV reactive detection beads. UV reactive detection beads indicate UV light by changing colour. The stronger the ultraviolet radiation present, the faster the colour change and the deeper the colour. Once indoors and away from the sun's UV light, the beads change back to off-white.

Key messages

- Ultraviolet (UV) radiation is invisible, you cannot see or feel it. We can see its effects though
- If the UV Index is 3 or above, it can cause sunburn and skin damage
- When the UV Index is 3 or above, sun protection is required
- UV and heat are not the same thing
- The UV index can be 3 or above when it is cool and cloudy
- UV radiation can bounce and reflect off surfaces, so it is important to use all five forms of sun protection. Slip, Slop, Slap, Seek and Slide
- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface
- UV levels gradually increase from sunrise and peaks at solar noon on a clear sky day. Solar noon is the point at which the sun is directly overhead. UV levels then decline until sunset.
- Make informed decisions and healthy lifestyle choices around skin protection.

Resources

- Activity sheet: Design a UV Radiation Detection Accessory
- Range of recycled and art and craft materials
- UV detection beads Abacus Educational Suppliers

Instructions

1. Experiment with the UV reactive detection beads. Students move around the room and observe the colour of their beads placed under different sources of light (such as lamps, a grow-light for plants). Note that fluorescent lighting will not change the colour of the beads.
2. Students should notice that their beads will begin to change colour as they move towards the window.
3. Test the beads outside, remembering it does not need to be a bright or hot sunny day.
4. Ask key questions to generate discussion and develop an explanation for the changes they are seeing.
5. Distribute activity sheet and research different types of accessories.
6. Plan and draw two designs and ensure designs are labelled with as much detail as possible. List materials.

   Note: Designs must include the UV detection beads and can be anything that can be worn, such as a hat, jewellery, or arm band.
7. Students select which design they will be creating and construct their accessory.
8. Complete the remainder of the questions on the activity sheet for reflection.

Key questions

- What did you notice about the beads?
- Are the beads darker in direct sun light? What happens in the shade?
- Why is it important to be very aware of UV radiation?
- How do we know that UV radiation is there?
- What is the difference between heat and UV radiation?
- What are some strategies we can use to protect ourselves from UV?

When completing activities and lessons outdoors when the UV Index is 3 or above, please remember to be SunSmart

Activity Sheet: Design a UV Radiation Detection Accessory

Task

Conduct an experiment to observe how shadows appear at different times of the day.
Record your results below and answer the following questions.

My Height: _____

Develop and label two accessory designs. Select your best design to make.

1.	2.

List the resources required

After you have made your UV detection accessory, what are some of the challenges you encountered?

What did you do to overcome the challenges?

Does your UV detection accessory work? Why or Why not?

Lesson 10: Design a UV Meter

Background

This activity is a fun and interactive way for students to extend and consolidate their knowledge about ultraviolet (UV) radiation and the UV Index. They will have the opportunity to research what a UV meter is and why they play an important role in skin cancer prevention. UV meters give an accurate, visible and local measure of UV radiation. They also provide information on what the UV Index numbers mean and what action should be taken to protect from skin damage.

Key messages

- Overexposure to ultraviolet (UV) radiation is the major cause of skin cancer
- Childhood and adolescence are critical periods during which overexposure to UV is more likely to contribute to skin cancer later in life
- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface
- UV levels gradually increase from sunrise and peaks at solar noon on a clear sky day. Solar noon is the point at which the sun is directly overhead. UV levels then decline until sunset
- UV radiation can bounce and reflect off surfaces, so it is important to use all five forms of sun protection. Slip, Slop, Slap, Seek and Slide
- UV radiation is invisible, you cannot see or feel it. We can see its effects though
- If UV Index is 3 or above, it can cause sunburn and skin damage
- When the UV Index is 3 or above, sun protection is required
- UV radiation and heat are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy.

Resources

- Activity sheet: Design a UV Meter
- The UV Index explained
- How to read the UV forecast poster
- Generation SunSmart-UV meters
- Art and craft supplies
- Range of recyclable materials

Instructions

1. Ask key questions to activate prior knowledge about UV and sun protection.
2. Research and visit the Generation SunSmart website for further information on UV meters.
3. Record key information on the activity sheet.
4. Plan and draw their design, ensuring the design is labelled with as much detail as possible. List materials.
5. 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 very aware of UV?
- How do we know that UV radiation is there?
- What is the difference between heat and UV radiation?
- What are some strategies we can use to protect ourselves from UV?

Example UV meter by Year 6 students at Scarborough PS

Activity Sheet: Design a UV Meter

Task

Research and explore images and function of UV meters.

Make some notes of your observations.

1. _____

2. _____

3. _____

4. _____

5. _____

Draw, plan and label your design below.

Activity Sheet: Design a UV Meter

Make a list of the materials required

1. _____

2. _____

3. _____

4. _____

5. _____

KEY IDEA: TOO MUCH SUN CAN HURT YOUR SKIN
Concept 3: Our seasons

LEARNING INTENTIONS

Students will:

- understand that there are different seasons
- know that winter/wet and summer/dry are different times of the year
- identify major differences between winter and summer
- know that you can still get sunburn in winter
- understand that sun protection is required even when it is cool and cloudy
- understand that too much ultraviolet (UV) radiation can hurt their skin
- understand the need to protect their skin when the UV Index is 3 or above.

OVERVIEW

Lesson 1: Our World

Lesson 2: Diverse and Connected World

Lesson 3: UV Across the Seasons
Resource sheet: UV Across the Seasons Australian Maps
Activity sheet: Comparing UV Averages Across Australian Seasons

Lesson 4: Protecting life: Martian Challenge
Activity sheet: Martian Challenge

Lesson 5: SunSmart Dictionary Definitions

USEFUL LINKS

SunSmart Global UV app
Bureau of Meteorology website
ARPANSA
How the read the UV forecast poster

Lesson 1: Our World

Background

This activity provides students with the opportunity to compare and contrast the climate and other sun related characteristics of the countries throughout the world in relation to their location in Australia.

The inquiry includes the following elements:

- Investigation and comparison of what it would be like to live in a place with a different climate
- Considerations regarding local, regional and state, territory, rural and urban settlement patterns. Note factors such as geographical features, climate and water resources
- Interpretation of information and/or data collected (e.g., sequence events in chronological order, identify patterns and trends, make connections between old and new information).

Key messages

- The angle of the earth to the sun creates the seasons. The intensity of the sun changes due to this angle. Daily UV levels remain fairly constant despite changes in local weather on the ground.
- Ultraviolet (UV) radiation is not hot. It cannot be felt and isn't connected to temperature. UV levels can be damaging on cool, cloudy, warm and sunny days.
- Checking the UV Index forecast helps us determine when the UV Index is 3 or above and sun protection is required.
- UV levels are affected by several factors including geographic location, altitude, time of day, time of year, surrounding surfaces and cloud cover.

Resources

- SunSmart Global UV app
- Bureau of Meteorology
- ARPANSA
- Electronic device or research texts

Instructions

1. Activate prior knowledge and ask key questions.
2. Students choose three countries from around the world and investigate the climate and other sun related characteristics in relation to their location in Australia.
3. Select a specific day to record the season, climate, temperature, UV Index of the selected countries.
4. Students draw conclusions and give explanations, based on the information and/or data displayed in texts, tables, graphs and maps (e.g., show similarities and differences).

   Note: Students may note population settlement patterns for local, regional, national, rural and urban settings, and compare for discussion and class sharing.
5. Present findings and conclusions in a range of communication forms (e.g., written, oral, visual, digital, tabular, graphic), appropriate to audience and purpose, using relevant terms.

Key questions

- What do you think you will discover or learn by completing this inquiry?
- What did you notice when comparing the geographical location, UV Index and climate?
- What similarities and differences did you notice? Explain
- Why is it important to know the difference between UV radiation and heat?

Variation: Places I have been

- Create a graph with towns, cities and places and the UV Index on a specific day. Include data such as climate, season, temperature and maximum temperature.

Lesson 2: Diverse and Connected World

Background

Students research and view several images of major countries from around the world and explore their location, climate and weather conditions. The aim of the Diverse and Connected World is to extend and consolidate their understanding that location, climate and seasons impact on the UV Index and that no matter what country or climate, sun protection is required when the UV Index is 3 or above.

Key messages

- The angle of the earth to the sun creates the seasons. The intensity of the sun changes due to this angle. UV levels remain fairly constant during a season despite changes in local weather
- Checking the UV Index forecast helps us determine when the UV Index is 3 or above and UV protection is required
- UV radiation and heat (temperature) are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy
- Skin damage is caused by ultraviolet (UV) radiation, not temperature.

Resources

- Various outdoor images from major countries around the world
- Research books or electronic device
- World map

Instructions

1. Select various outdoor images from major countries around the world.
2. Display and discuss. Ask students what can you see? What is the location of these images?
3. Discuss further and focus on climate. Students predict the season from each image.
    - What time of year would this be?
    - Which is a winter picture? Why?
    - What dangers can the students see?
4. Describe the location of the major countries of the Asia region in relation to Australia and the geographical diversity within the region.
5. Using geographical tools, students identify the geographical division of Asia into North-East, South-East, South Asia and West Asia.
6. Explore the diversity of the environments and types of settlement in the Asia region, or in part of the region, or in a country in either North-East, South-East or South Asia and discuss any patterns.
7. Describe the location of places in countries of the Asia region in absolute terms using latitude and longitude.

Key questions

- How are the climate or seasons different to Australia?
- What similarities and differences did you notice? Why do you think this is?
- Should other countries be concerned about UV radiation and sun protection? Why or why not?
- Why is it important to know the difference between UV radiation and heat?

Variations

- Create questions around the mathematical chance sub strand and sun, place or season statements that involve practical activities and everyday events.
- Describe possible everyday events and order their chances of occurring in relation to sun, seasons, UV, sunburn etc.

Lesson 3: UV Across the Seasons

Background

This lesson aims to demonstrate that it is not only when it is summer when we need sun protection, but also during other seasons. It is the ultraviolet (UV) radiation from the sun that causes skin damage not heat.

Key messages

- The angle of the earth to the sun creates the seasons. The intensity of the sun changes due to this angle. UV levels remain fairly constant during a season despite changes in local weather
- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface
- Checking the UV Index forecast helps us determine when the UV Index is 3 or above and sun protection is required
- UV radiation and heat are different
- Skin damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day can have similar UV levels to a warm, sunny day
- The free SunSmart Global UV app tells you when sun protection is recommended for your location
- We often check the weather forecast, but it is also important to check the daily UV Index to know when to protect our skin from UV radiation.

Resources

- Resource sheets: UV averages across Australian seasons
- Bureau of Meteorology: Average solar ultraviolet (UV) Index
- Activity sheet: Comparing UV averages across Australian seasons
- ARPANSA
- How the read the UV forecast poster
- SunSmart Global UV app

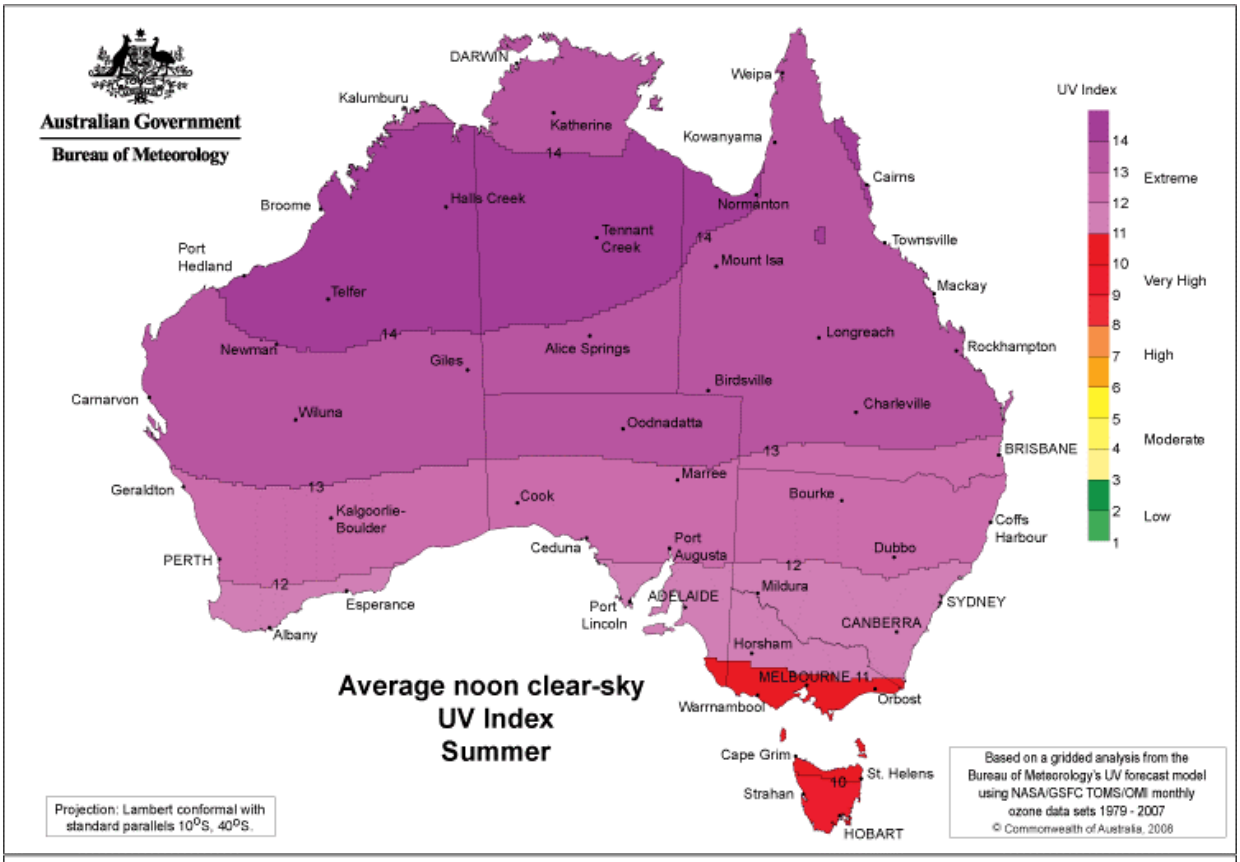
Instructions

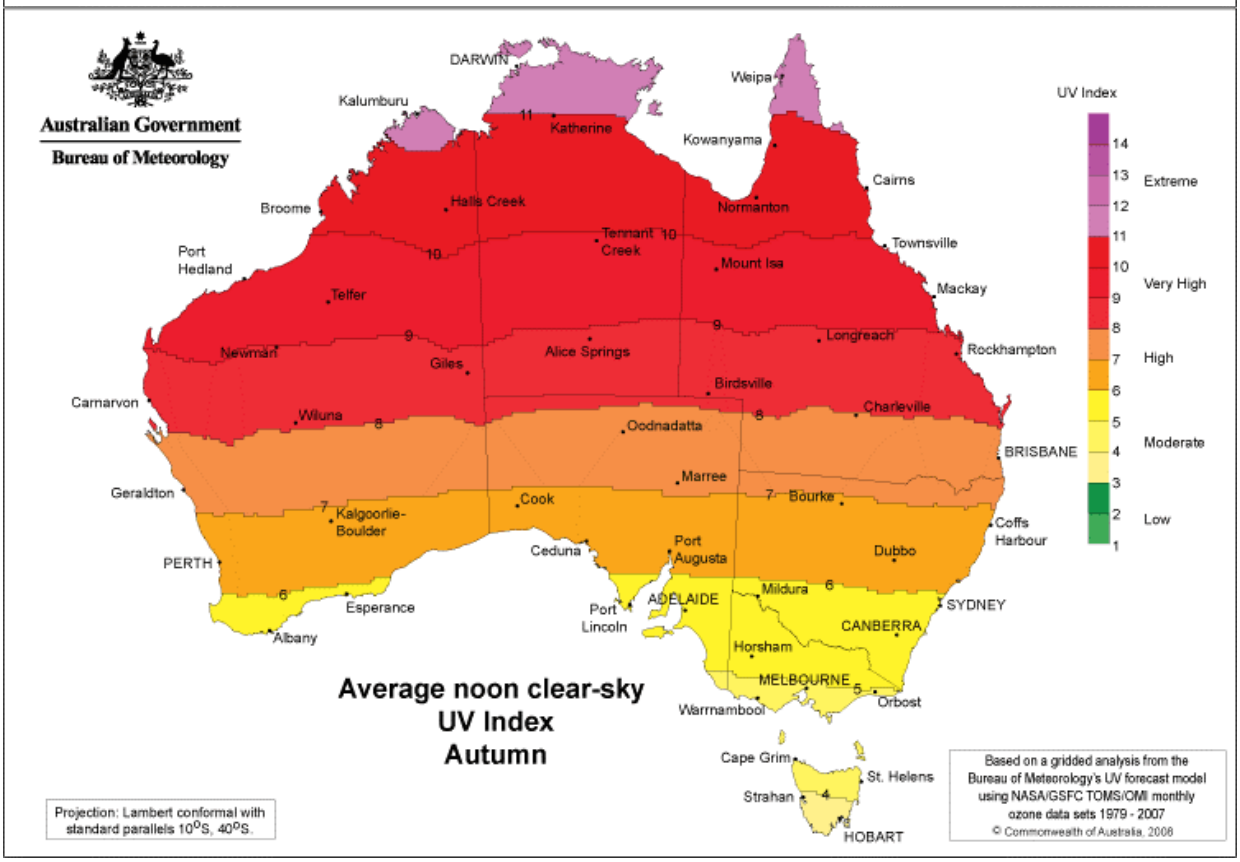
1. Visit the Bureau of Meteorology website and display the average solar ultraviolet (UV) Index. The maps show the average annual, monthly and seasonal values of the UV index over Australia.
2. Search the UV Index for each month using the dropdown menu.
3. Note and discuss the images and data displayed for each month and related season.
4. Locate the area you live in and the UV Index for that time of the year.
5. Discuss and interpret carefully what the different colours indicate.
6. Complete the activity sheet using the UV Index averages across Australia season maps.

Key questions

- How does the data compare to the 'typical data' readings for that season?
- What are the UV Index levels forecast for our area today?
- What will be the highest UV Index level reached?
- When will it be at that level?
- At what times will the UV Index be 3 or more?
- At what times will we need to use sun protection?
- What do you notice about the four different maps of Australia at different times of the year?
- Which season has the lowest UV Index?
- Do you need sun protection in winter? Why? How do you know?
- Which month do you think the UV Index with be at its lowest for your area?

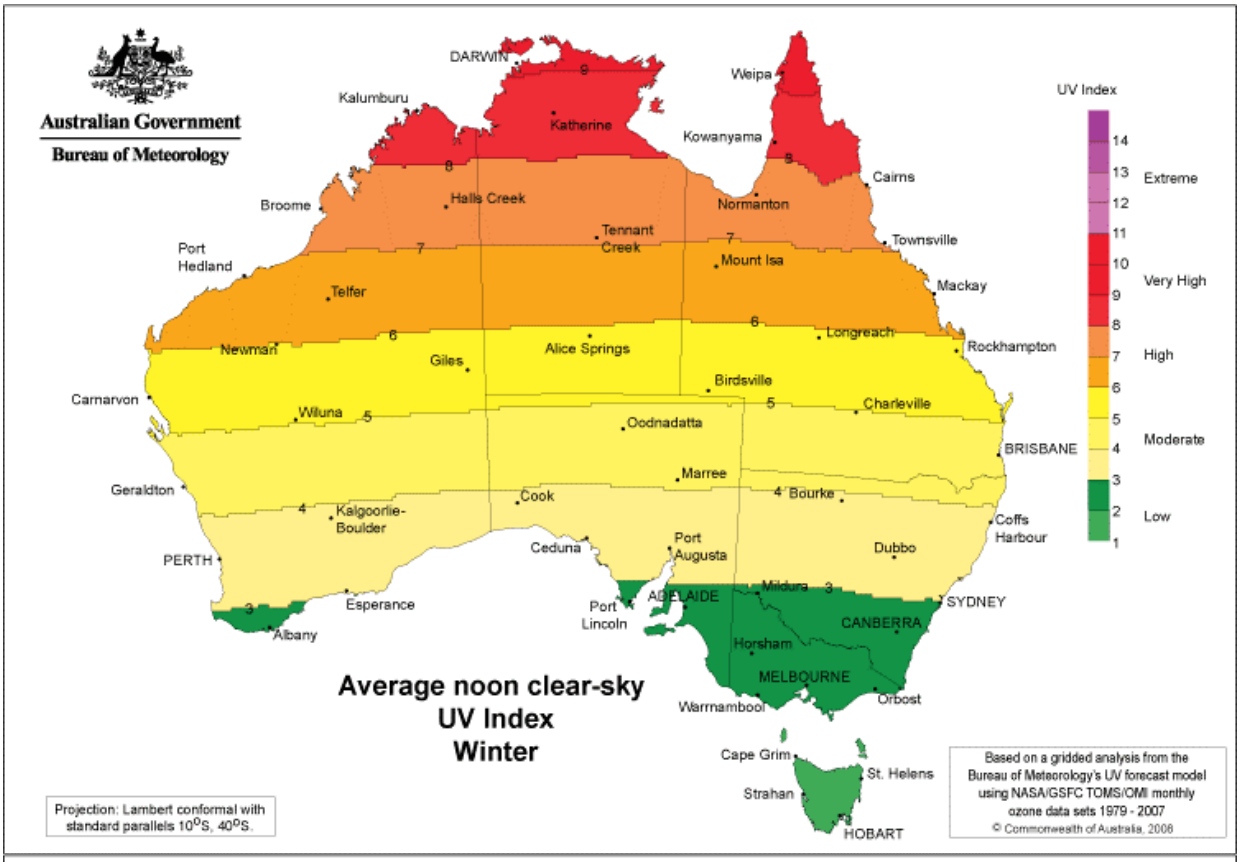
UV Averages Across Australian Seasons

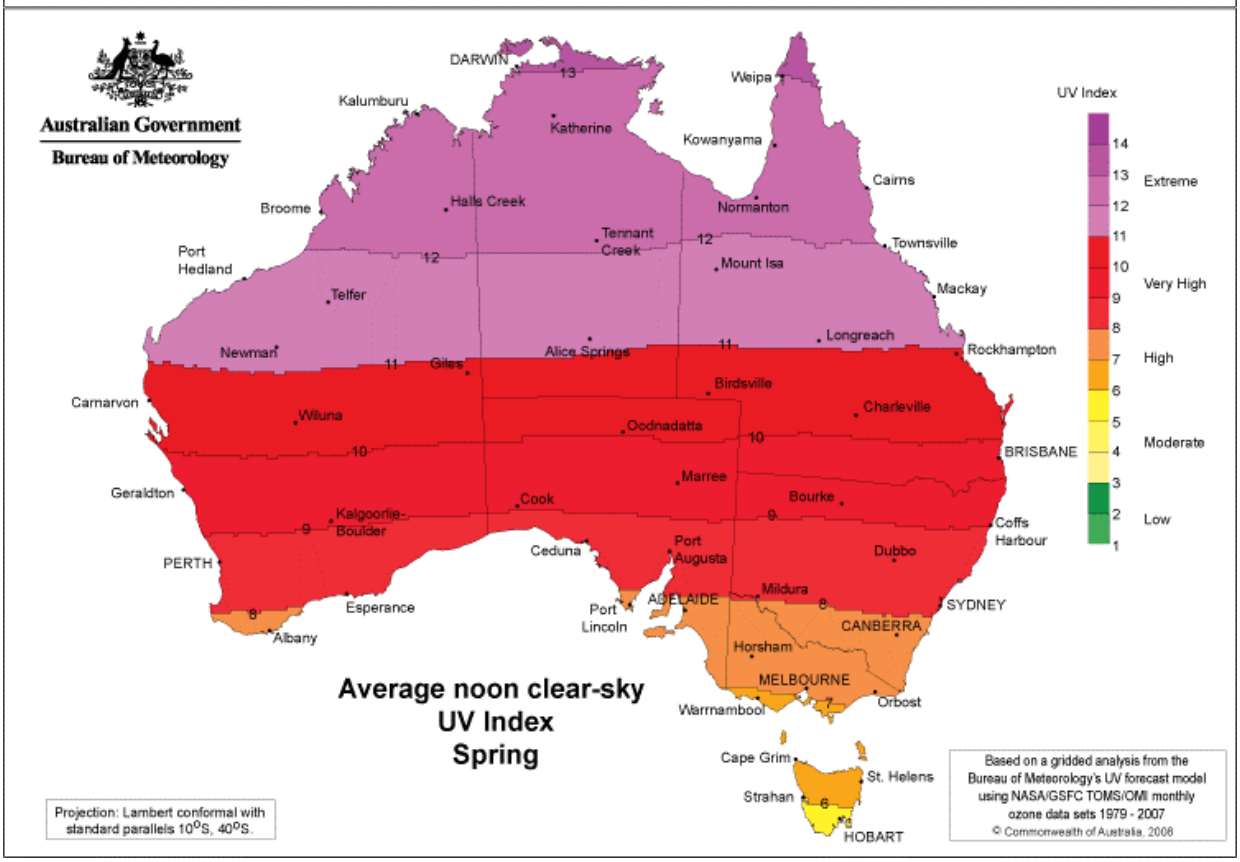




Bureau of Meteorology website (BOM) Average solar ultraviolet (UV) Index

UV Averages Across Australian Seasons





Bureau of Meteorology website (BOM) Average solar ultraviolet (UV) Index

Activity Sheet: Comparing UV Averages Across Australian Seasons

Task

Record the UV Index for the places listed in the table using the UV Index averages across Australian seasons maps.

	Summer	Autumn	Winter	Spring
Newman				
Albany				
St. Helens				
Dubbo				
Darwin				

Create a line graph below and use a different colour for each location.

Which location needs sun protection all year round?

_____

_____

_____

Lesson 4: Protecting Life: Martian Challenge

Background

Students explore how UV radiation from the sun can affect living things, comparing conditions on Earth and Mars, and then discuss ways in which organisms may protect themselves from UV radiation. This activity has been adapted from NASA's Protecting life: The Martian Challenge. Part one of the activity involves students designing and creating a Martian using craft materials and UV beads. The UV beads are 'radiation detectors' and students experiment and make observations for shade and full sun.

How do UV beads work? The UV reactive detection beads indicate UV light by changing colour. The stronger the ultraviolet radiation present, the quicker the colour change and the deeper the colour. Once indoors and away from the sun's UV light, the beads change back to off-white. The sunglasses and UV reactive beads experiment tests to see if sunglasses can block out ultraviolet radiation.

Key messages

- UV is invisible, you cannot see or feel it. We can see its effects though
- If UV index is 3 or above, it can cause sunburn and skin damage
- When the UV Index is 3 or above, sun protection is required
- UV and heat are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy
- UV radiation can bounce and reflect off surfaces, so it is important to use all five forms of sun protection. Slip, Slop, Slap, Seek and Slide
- The UV Index is an open-ended numerical scale that measures the amount of UV radiation reaching the earth's surface
- UV levels gradually increase from sunrise and peaks at solar noon on a clear sky day. Solar noon is the point at which the sun is directly overhead. UV levels then decline until sunset.

Resources

- Activity sheet: The Martian Challenge
- UV beads (can be found online or craft stores)
- Protecting Life: The Martian Challenge
- Beads (non-UV)
- Pipe cleaners
- Various craft items for constructing a creature, such as Styrofoam balls, felt, foil, additional pipe cleaners, small milk cartons, empty small water bottles, coloured card stock, pompoms, and coloured wool
- Select an outdoor area that has a shady and sunny spot
- Prepare an indoor area: ensure area is large enough to enable students to create their Mars creatures.

Instructions

1. Discuss characteristics of Mars that might be helpful to life. Discuss the challenges that living things on Mars would face and UV radiation.
2. Design a Martian creature using the materials provided and share ideas.
3. Construct a Martian or Mars creature. Explain that creatures will include radiation detectors (UV beads) that are made from a special pigment that is very sensitive and changes colour when exposed to the ultraviolet rays
4. Predict: Complete the predict section of the activity sheet.
5. Observe: Cover the Martian's radiation detectors with their hands and take it outside.
6. Shaded observations: Stand in the shade and uncover their creature. What do you observe happening to the Mars creature's radiation detectors? The beads become lightly coloured, indicating that, even in the shade outside, there is some UV radiation reaching the detectors and our skin.

Note: Repeat step 5. Keep the creature covered for about two minutes while the beads change back to white. Use this opportunity to discuss their observations. What do you think will happen when we take our creatures out into the full sunlight?

7. Full sun observations: Take the Martian into the full Sun. What happened to the beads? The beads changed colour, reacting to the intensity of the UV radiation to which they are being exposed.

Lesson 4: Protecting Life: Martian Challenge

8. Return indoors and continue the discussion with key questions.
9. Complete the observe section of the activity sheet.
10. What happened to your Martian's radiation detectors? Was your prediction correct?
11. Reflect: Class discussion, what did this experiment tell you about UV radiation and you?

Key questions

- What is UV? How does is affect us?
- Why is the sun important? What are some harmful effects of the sun?
- What could happen when we take our creatures out into the full sunlight?
- Where did they change the most? Why do you think this is?
- What happened to the radiation detectors? Did they change in the shade? In the Sun?
- What caused your creature's radiation detectors to change colours?
- What happened to the radiation detectors after coming back inside?
- What did this experiment tell you about UV radiation and your health?
- How do we protect ourselves from UV radiation?

When completing activities and lessons outdoors when the UV Index is 3 or above, please remember to be SunSmart

Activity Sheet: The Martian Challenge

Predict

When you have finished making your Martian, what do you observe?

What colour are your Martian's UV radiation detectors indoors?

Are your Martian's radiation detectors picking up any signs of radiation indoors?

What colour are your Martian's UV radiation detectors indoors?

Observe

Cover your Martian's radiation detectors with your hands and take it outside.

Shaded observations: Stand in the shade and uncover your creature. What did you observe?

Full sun observations: Re-set the UV beads by covering them for 2 mins. Take your Martian into the full sun.

What did you observe?

Where did the radiation detectors change colour the most? Why did this happen? What caused your creature's radiation detectors to change colours?

What happened to the radiation detectors after coming back inside? Explain why

Activity Sheet: The Martian Challenge

Reflect: What did this experiment tell you about UV radiation and your health?

Lesson 5: SunSmart Dictionary Definitions

Background

In this lesson, students will incorporate key words associated with sun protection into the classroom spelling program and extend vocabulary. It aims to improve students' knowledge, spelling and meaning of sun protection key words and apply these words to their everyday spoken language, schoolwork and other situations.

Resources

- Dictionary or device
- List of SunSmart words

Instructions

1. Search the definition for the SunSmart words using a dictionary or device.
2. Record the word and the definition into an exercise book.
3. Write the word knowledge meaning into a sentence within the context of sun protection.
    - For example: application – The correct application of sunscreen provides a protective layer against harmful UV radiation from the sun.

Other ideas

- Over a period of 4 days, provide students with 5 new words to complete the dictionary definition and sentences activity. At the end of the week, students quiz each other on the definition and meaning of the words in relation to sun protection
- Sort the words into groups based on noun, verb, or adjective
- Count how many syllables are in each word? Draw a diagonal line where the syllable breaks up the word
- What letter patterns can you find? For example, 'tion' spelling makes the 'shun' sound and the word health has the 'th' digraph. Are there any others?

SunSmart words

sunscreen	health
protection	safety
ultraviolet	measure
broad	application
brimmed	protect
radiation	combination
community	infrared
forecast	UV Index
temperature	maximum
strength	exposure
melanoma	prevention
educate	environment

Concept 4: Keeping Your Skin Sun Safe

LEARNING INTENTIONS

Students will:

- know that the sun can damage skin
- understand that too much sun can damage our skin
- recognise the need to protect their skin when the UV index is 3 or above
- identify when their skin is at risk
- explain the five ways to protect their skin: Slip, Slop, Slap, Seek and Slide and understand the need to use all five.

OVERVIEW

Lesson 1: SunSmart Gallery Walk
Activity sheet: Reflection Sheet

Lesson 2: SunSmart Word Storm Art

Lesson 3: Write a Letter to Your Younger Self

Lesson 4: SunSmart Teen Warning
Activity sheet: Kids News Response

Lesson 5: SunSmart Diorama
Activity sheet: SunSmart Diorama Planning Sheet

Lesson 6: Hat Investigation: See My Hat

USEFUL LINKS

SunSmart teen warning article
WordArt
Dear 16-year-old Me
What happens when you get sunburn
The Shade Handbook
See My Hat exhibition
History of Hats
Hat History – Who Invented Hats
Hat Wiki
The Hat Museum

Lesson 1: SunSmart Gallery Walk

Background

Students work in small groups to complete a SunSmart gallery walk and answer several questions relating to ultraviolet (UV) radiation and sun protection. Students engage in conversations and write down their ideas, thoughts, comments or questions for each question and post it on the chart. A reflection sheet is provided to capture the process.

What is a gallery walk? A gallery walk is a classroom-based active learning strategy where students are encouraged to build on their knowledge about a topic or content to promote higher order thinking skills, interaction and cooperative learning. This discussion technique allows small groups of students to be actively engaged as they walk throughout the classroom to share ideas and respond to meaningful questions.

Key messages

- There are many different health messages and information that can influence our health decisions and behaviours. It is important to make informed decisions and choose a course of action that avoids risks and reduces harm
- Look for information from credible sources to make informed decisions around sun protection
- The sun produces heat that we can feel and light that we can see. It also produces ultraviolet (UV) radiation that we cannot see or feel
- When the UV index is 3 or above, sun protection is required
- UV and heat are not the same thing
- The UV index can be 3 or above when it is cool and cloudy.

Resources

- Post it notes or blank cards
- Pencils, pens or markers
- Activity sheet: Reflection Sheet
- Pin up, white board or chart paper
- Optional: Timer for rotations

Instructions

1. Write key questions on a piece of chart paper or whiteboard. Hang or place the questions in various places around the classroom to create five stations.
2. Group students into teams and provide post it notes or cards. Each team starts at a different station.
3. At their first station, groups read what is posted and record their responses, thoughts, comments and opinions on the chart paper. Groups can add other questions to the charts.
4. On the first rotation, groups will read and discuss the question and the post it notes placed by the previous group. The group then record their responses, thoughts, comments and opinions on the post it notes and add it to the chart.
5. Groups rotate until each station has been completed.
6. Once the gallery walk has finished, all groups join for a whole class discussion and reflection of the task. During the discussion, address any misconceptions or questions raised. Ask students if there were anything they were surprised about.
7. Students clarify and provide additional information about the comments or opinions during the class discussion and complete the reflection sheet.

Key questions

- What do you know about UV?
- Describe some of the challenges with sun protection.
- What are some of the myths surrounding sun protection?
- What are some facts about sun protection and UV radiation?

What did I know	What did I learn	What was I surprised about

Lesson 2: SunSmart Word Storm Art

Background

Words can be so much fun! This activity provides students with the opportunity to be creative and make a colourful piece of art using SunSmart related words and the Word Art website. Students experiment with the different functions such as font, colour, style, shape and so much more, to develop their very own, unique SunSmart word storm art.

Resources

- WordArt

Instructions

1. Class brainstorm words associated with being SunSmart.
2. Use key questions to further develop ideas.
3. List words on the board and discuss the different themes or categories such as sunscreen, beach, ultraviolet (UV) radiation and sun protection.
4. Experiment and develop word storm art using the shape, style, colour and font options.
5. Print, glue onto card and display.

Key questions

- Do any of the words belong to specific themes or categories?
- What colours would you associate with sun protection?
- What colour pallet are you going to use? Why?
- What words would work better than others?
- How could you make your SunSmart word storm art stand out and be read easily?

Lesson 3: Write a Letter to Your Younger Self

Background

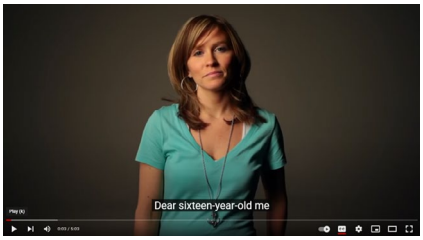
This lesson aims to activate students' critically thinking skills and reflect on how their actions and behaviours today can impact their health later in life. Students watch a thought-provoking video and write a letter to their younger self within the context of sun protection.

Key messages

- Research has established that childhood and adolescence are critical periods during which sun exposure could contribute to skin cancer later in life
- In Western Australia, UV radiation levels are 3 or above for the majority of the year
- It is estimated that more than 75% of all skin cancers could be prevented by practicing sun protective behaviours in childhood and adolescence
- The sun produces heat that we can feel and light that we can see. It also produces ultraviolet (UV) radiation that we cannot see or feel
- The sun produces UVA (skin damage/skin cancer, ageing, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth)
- The sun produces ultraviolet radiation that causes damage to the skin
- UV radiation can bounce and reflect off surfaces, so it is important to use all five forms of sun protection. Slip, Slop, Slap, Seek and Slide

Resources

- Dear 16-year-old Me



Instructions

1. Watch the resource video.
2. Ask key questions to generate discussion.
3. Display the statement: 'Imagine writing to your younger self' What would you say?
4. Set the context to focus on sun safety: What sun protection messages would you try to focus on?
5. Write a letter to their younger self.
6. Provide prompts:
    - Dear me, I am writing this letter to remind you of the most important things
    - What lessons have I learned up to this point?
    - Tell yourself what you wish you had been told by someone else back then
    - What advice would you tell yourself?
    - If I could rewind the clock, what would I do differently?
    - What would you do differently to change your life?
7. Writing task should include language features to show how ideas can be extended, complex sentences, unfamiliar technical vocabulary, figurative language, accurate spelling and punctuation and self-edits from students for cohesive structure and meaning.

Key questions

- How did the video make you feel?
- What do you think the purpose of the video was? Why? How do you know?
- Do you think the video is effective in getting the sun protection message across?
- Who do you think the target audience is? Explain why
- What sun protection advice would you give yourself in the letter?
- What knowledge of sun protection and UV radiation can you offer in the letter?
- What things could we do to increase the community's knowledge of UV and sun protection?

Lesson 4: SunSmart Teen Warning

Background

This lesson aims to educate students about tanning and reflect on their personal views around tanning and sun protection practices. This activity involves students reading a news article, completing an activity sheet and creating a quiz using content from the article.

Key messages

- Research has established that childhood and adolescence are critical periods during which sun exposure could contribute to skin cancer later in life
- Worrying statistics show that 62 per cent of children aged between 12 and 17 think that a tan is a good thing
- Tanning or any change of colour on your skin that is caused by UV radiation is a sign of skin damage. It is a sign of an increase in the production of melanin, which is your skins attempt to protect it from further damage. Tanning is skin cells in trauma
- A tan is not healthy. Any tan is an injury to the skin, putting you at risk not only of premature ageing of the skin but also skin cancer
- Teenagers need to be aware and practice the sun safe message to protect their skin from over exposure to UV radiation.
- The sun produces UVA (skin damage/skin cancer, ageing, wrinkles), UVB (sunburn, skin cancer) and UVC (doesn't reach earth).
- When the UV Index is 3 or above, sun protection is required
- There are 5 ways to protect your skin from the sun: Slip, Slop, Slap, Seek and Slide.

Resources

- SunSmart teen warning article and audio
- Access to a device or shared screen
- Online quiz platforms
- Activity sheet: Kids News Response

Instructions

1. Ask key questions to activate prior knowledge around tanning.
2. View teen warning article and discuss
3. Share ideas, questions, thoughts and opinions as a class.
4. Complete the activity sheet.
5. Extension: Create a quiz using content from the video.

Key questions

- What are your views about tanning? Do you think it is harmful? Why or why not?
- Why are health professionals worried about tanning?
- Why do you think most teens are ignoring the health warnings?
- Why does Mrs. Madigan worry about applying fake tan?
- How can you convince your peers that tanning is unsafe?
- What changes are you going make to protect your skin?

KIDSNEWS

NEWS SPORT KEY TOPICS Reading Levels ▶ Green Orange Red Search

Experts give health warnings to teenagers, who incorrectly believe a tan is healthy

Lydia Pedrana, November 25, 2018 7:55PM Daily Telegraph Print Article

Activity Sheet: Kids News Response

Experts provide informed health warnings to teenagers, who incorrectly believe a tan is healthy

Task

Read or play SunSmart Teen Warning. Answer the following questions.

Why are health professionals worried about teenagers tanning?

List the three reasons teens ignore the health warning

1.

2.

3.

Why does Ms Madigan worry about applying fake tan?

How can you convince your peers that tanning is unsafe?

What changes are you going make to protect your skin now that you have the facts about tanning?

Extension: Create an online quiz using content from the news article/audio.

Lesson 5: SunSmart Diorama

Background

Students create a small world diorama of an environment to protect people from ultraviolet (UV) radiation and explore how shade plays an important role in sun protection. They will research and gather information about the different types of shade found and provided in schools, parks and beaches. Students will then design and create a 'small world' of these environments and include examples of quality shade structures or natural shade to protect children from UV radiation.

Key messages

- Shade provides an important role in sun protection. Shade can be natural such as trees, plants, vines, portable and permanent shade structures
- Some trees, such as the Eucalyptus camaldulensis, provide more canopy shade protection from UV radiation than other trees. There is a canopy density guide available that rates the effectiveness of tree canopy UV protection: heavy – over 90% UV protection, medium – around 60% UV protection and light – less than 30% UV protection
- Quality shade provides protection from UV radiation and considers how people will use the space
- Well-designed shade considers highly reflective surfaces. Generally, soft or rough surfaces such as brick pavers and grass reflect less UV radiation than hard or smooth surfaces
- Good-quality shade fabric is an important part of shade structure. Different fabrics have different UV radiation absorbing properties
- UPF (ultraviolet protection factor) rating is based on how much UV radiation is transmitted through a fabric. It is an indicator of the protective ability of the fabric. The higher the UPF, the greater protection offered, with a maximum value of UPF 50+. Fabrics that let a lot of light through are not SunSmart. Generally, the less light that can pass through, the better the fabric
- Protect your skin in five ways: Slip, Slop, Slap, Seek and Slide
- UV radiation and heat are not the same thing.

Resources

- Variety of community shade images
- Small cardboard box or shoe box
- Recycled materials
- Range of art and craft materials
- Activity sheet: SunSmart Diorama Planning Sheet
- The Shade Handbook

Instructions

1. Ask key questions to activate prior knowledge.
2. Discuss the importance of shade.
3. Browse a range of images of community shade areas such as parks, beaches or schools.
4. Compare and discuss the shade at your school.
5. Select an environment (beach, park or school) to create a SunSmart small world.
6. Research the environment and explore images of different parks, beaches and schools.
7. Record notes on the planning sheet.
8. Plan, draw and label the design.
9. List resources and materials needed to make a diorama.
10. Create a small world diorama and present it to the class.

Key questions

- What types of shade do you see at the park, beach and school?
- Is shade 'enough' to protect your skin from UV radiation? Why not?
- What is the difference between natural shade and man-made shade?
- What are good examples of shade? How do you know?

Activity Sheet: SunSmart Diorama Planning Sheet

What environment have you chosen? _____

Research and explore images of the environment of choice

What types of shade are provided? 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.

Lesson 6: Hat Investigation: See My Hat

Background

In this lesson, students explore the role of hats over the years and their purpose. Students apply their research to create a 'history of hats' collage displaying a variety of hats defined by their purpose. Hats have many purposes and have evolved and changed over the years.

Key messages

- Hats have played various roles over times and have different purposes, including sun protection
- UV radiation and heat are not the same thing
- The UV index can be 3 or above when it is cool and cloudy
- The skin on your face, neck and ears is much thinner and more sensitive to UV damage than other skin on your body. A good hat can help protect these sensitive areas, but not all hats offer the same level of protection
- Broad-brimmed, legionnaire and bucket hats provide the best sun protection from UV radiation as they cover the face, neck, ears, and crown of the head
- Caps are not sun protective because they only protect your scalp and forehead
- For best protection when the UV is 3 or above, use all five forms of protection: clothing, sunscreen, broad-brimmed hat, shade, and sunglasses
- Play time should not be restricted if a hat has been forgotten and students should be encouraged to play in the shade.

Resources

- See My Hat exhibition
- History of Hats
- Hat Wiki
- The Hat Museum
- A3 paper or poster paper

Instructions

1. Research the history of hats and other resource links.
2. Take notes and develop categories for different hat types:
   - hats for work
   - hats for play
   - hats for fashion
   - hats for sun protection
3. Print off a range of hat types for each heading.
4. Create a hat collage on poster paper using the hat images. Creativity is encouraged to display this information.
5. Record the name of the hat, hat type and a brief description about the purpose of each hat.

Key questions

- What is the purpose of a hat?
- Is a cap SunSmart? Why not?
- What makes a SunSmart hat?
- What are the differences between a cap and a broad-brimmed hat?
- What other ways can you protect yourself from UV radiation?
- Are there any hats you found that were different or interesting?

Key idea: How to be SunSmart: Keeping your skin sun safe

BACKGROUND NOTES

Whenever you go outside, your skin is exposed to the sun. The sun emits ultraviolet (UV) radiation that can lead to sunburn and long-lasting damage to unprotected skin. You can protect your skin from UV radiation with important sun safety habits whenever the UV Index is 3 or above.

Slip on UV protective clothing

- Choose clothing that covers as much skin as possible, such as collared shirts with long sleeves (to the elbow or beyond), or longer shorts/pants/skirts. Covering as much skin as possible with clothing provides a barrier to UV radiation
- When swimming, wear a rashie/t-shirt and longer bathers/board shorts
- Some clothing may carry an ultraviolet protection factor (UPF) rating – look for UPF50+
- If clothing does not have a UPF rating, choose fabrics with a tight weave that are loose fitting.

Slop on SPF50 or SPF50+ broad-spectrum, water-resistant sunscreen

- Apply a generous amount of sunscreen to clean, dry skin 20 minutes before going outside. This gives time for the sunscreen to bond to the skin
- The average-sized adult will need a teaspoon of sunscreen for their head and neck, each limb and the front and back of the body - about seven teaspoons (35mL) for a full body application. Application for children is dependent on size and should be proportional to recommended adult application
- Reapply every 2 hours and after swimming sweating or towelling off
- Spread sunscreen generously and evenly. Don't forget your nose, ears, neck, hands, and feet
- Choose sunscreen that protects against UVA and UVB radiation (broad-spectrum), is water resistant and has a valid expiry date
- Remember - sunscreen is not a suit of armour and should be used with other sun protection measures. Sunscreen alone is not enough.

Slap on a broad-brimmed hat

- Choose a broad-brimmed, bucket or legionnaire hat that protects the face, head, ears and neck
- Baseball style caps and visors do not provide enough protection, particularly to areas prone to skin cancers and sunburn.

Slide on sunglasses

- Choose close-fitting wrap-around sunglasses that meet the Australian Standard AS/NSZ 1067
- Sunglasses and a broad-brimmed hat worn together can reduce UV radiation exposure to the eyes by up to 98 per cent
- Sunglasses can be impractical for all children to wear at school, but should be encouraged. Wearing a brimmed hat can cut the amount of UV radiation reaching your eyes by 50%.

Seek Shade

- Find dense shade for outdoor activities
- Use trees, built shade structures, or bring your own. Effective shade can block up to 75% of UV radiation, so make sure you use shade in combination with other sun protection measures.

Concept 5: Taking positive action to reduce risk: Promoting and actioning effective sun protection strategies

LEARNING INTENTIONS

Students will:

- understand why sun safety is important and learn how to take effective sun protection actions e.g., hat wearing, accessing daily UV levels
- know that the skin needs protection and that the best sun protection practices are using a combination of Slip, Slop, Slap, Seek and Slide
- understand, explore, practise, rehearse and adopt positive personal health practices related to sun protection, sun safety and wellbeing.

OVERVIEW

Lesson 1: Sun Protection Awareness
Activity sheet: Poster Critique (two pages)

Lesson 2: Hat are important in high school too!
Resource sheet: Aquinas newspaper article
Activity sheet: Persuasive writing plan

Lesson 3: Puppet show

Lesson 4: Be a UV legend
Activity sheet: Be a UV legend template
Activity sheet: Be a UV legend ambassador

Lesson 5: Urban design

Lesson 6: Our school sun and shade audit
Activity sheet: Observation record sheet

Lesson 7: UV social media

Lesson 8: Two sides of the sun: Advert analysis
Activity sheet: Two sides of the sun: Advert analysis

Lesson 9: SunSmart relay

Lesson 10: Fitness navigation

USEFUL LINKS

Two sides of the sun SunSmart commercial
SunSmart posters
The Shade Handbook
Be a UV Legend Sydney Sixers
Be a UV Legend Sydney Thunder
Football tackle UV with good sun protection
SunSmart: The benefits of quality shade

Lesson 1: Sun Protection Awareness - Poster Critique

Background

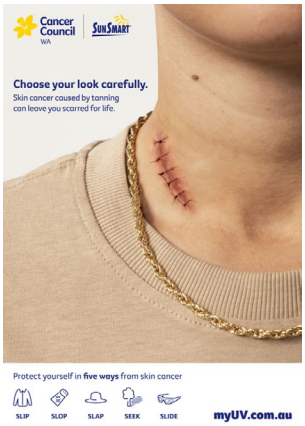
Posters are an effective way to help communicate, educate, and share important SunSmart messages to different demographics. The sun protection awareness activity involves analysing current SunSmart posters and completing the poster critique activity sheet. Teachers and students may use the SunSmart poster provided or select their own SunSmart poster to examine.

Key messages

- 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 practising sun protective behaviours in childhood and adolescence
- Skin damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day can have similar UV levels to a warm, sunny day
- SunSmart advertising campaigns aim to educate and raise public awareness about UV radiation and its impact on skin and skin cancer awareness
- Sun protection posters can be developed for target audiences and strategies and techniques are used to help get the key messages across.

Resources

- SunSmart posters
- Activity sheet: Poster Critique - Select Your Own
- Activity sheet: Poster Critique - Own Your Tone



Instructions

1. View a range of posters designed to raise sun protection awareness and safe sun practices.
2. Rank each poster in order from most appealing to least appealing.
3. Rank each poster in order from most effective to least effective.
4. Class discussion and key questions. Students critique one or two posters using the 1-5 scale found on the activity sheet.
5. Select a poster to critique or complete the #OwnYourTone poster critique activity sheet.

Key questions

- What is the key message portrayed in each poster? How do you know? What are the clues?
- What strategies and behaviours can promote health in relation to sun and UV radiation exposure?
- What strategies have been used to effectively portray the SunSmart message?
- Who is the targeted audience?
- Why do we still need the sun protection message?
- Do you think the adverts are effective in spreading the SunSmart message? Why or why not?

Activity Sheet: Poster Critique - Select Your Own

Task

Select a SunSmart poster and examine the messages expressed. Rate each element using a five-point scale to consider how presentation enhances the meaning, aesthetics and audience interpretation.

Target audience: _____

Select a SunSmart poster print, cut and paste here

What do you think are the key messages in the poster?

_____

_____

_____

_____

_____

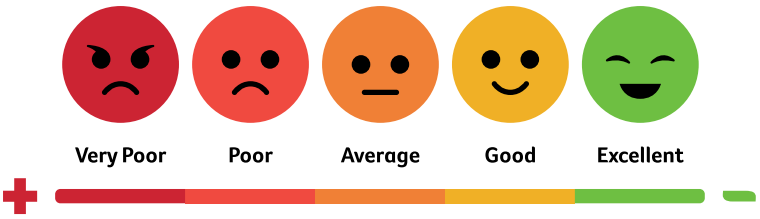
_____

_____

_____

_____

Does the poster adequately display the meaning of the message?



Explain the reason for your choice

_____

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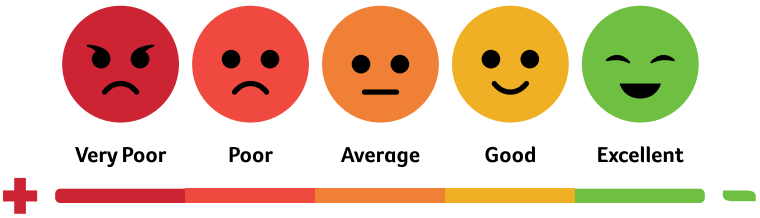
_____

_____

Does the poster visually appeal?



Explain the reason for your choice

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_____

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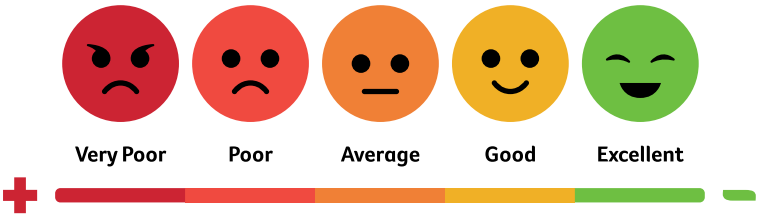
_____

Activity Sheet: Poster Critique - Select Your Own

Does the poster connect to the intended audience?



Explain the reason for your choice

Activity Sheet: Poster Critique - Own Your Tone

Task

Examine the SunSmart messages expressed in the #OwnYourTone poster. Rate each element using a five-point scale to consider how presentation enhances the meaning, aesthetics and audience interpretation.

Target audience: _____

What do you think are the key messages in the poster?

_____

_____

_____

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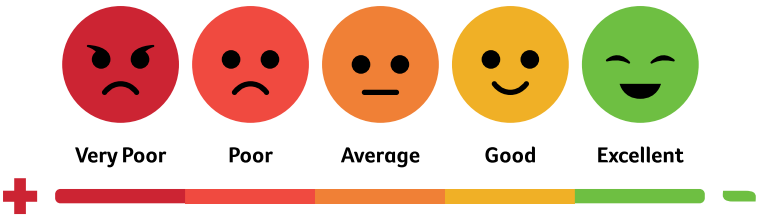
_____

Does the poster adequately display the meaning of the message?



Explain the reason for your choice

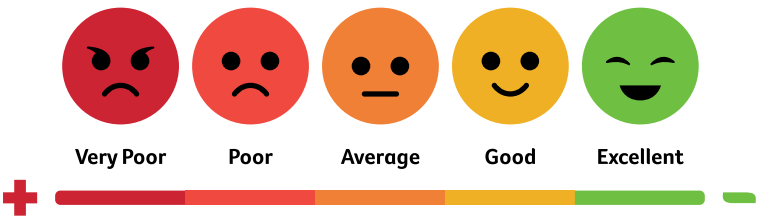
_____

_____

_____

_____

Does the poster visually appeal?



Explain the reason for your choice

_____

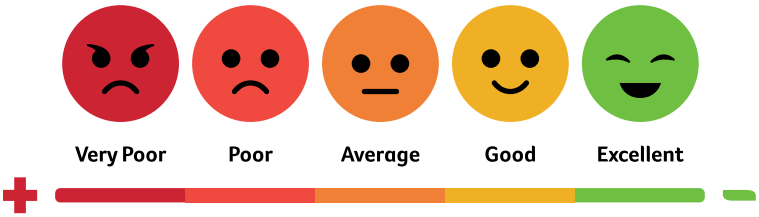
_____

_____

_____

Activity Sheet: Poster Critique - Own Your Tone

Does the poster connect to the intended audience?



Explain the reason for your choice

Lesson 2: Hats are Important in High School too!

Background

The persuasive writing lesson involves reading a newspaper article about a Western Australian school introducing SunSmart hats to their high school. SunSmart hats were compulsory in the primary school years, but did not continue into high school. The newspaper article is used as a stimulus to encourage critical thinking skills around UV radiation, sun protection and the importance of wearing SunSmart hats. It acts as a prompt for students to write a persuasive text about why sun protection and wearing SunSmart hats should not stop when students go to high school.

Key messages

- 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 practising sun protective behaviours in childhood and adolescence
- Skin damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day can have similar UV levels to a warm, sunny day
- The skin on your face, neck and ears is much thinner and more sensitive to UV damage than other skin on your body. A good hat can help protect these sensitive areas, but not all hats offer the same level of protection
- Broad-brimmed, legionnaire and bucket hats provide the best sun protection from UV radiation as they cover the face, neck, ears and crown of the head
- Caps are not sun protective because they only protect your scalp and forehead
- For best protection when the UV is 3 and above, use all five forms of protection: clothing, SPF50 or SPF50+ sunscreen, a broad-brimmed hat, shade and sunglasses.

Resources

- Resource: News article
- Activity sheet: Persuasive writing plan

Instructions

1. Distribute newspaper article to students.
2. Students read the newspaper article and make notes.
3. Ask key questions to generate class discussion.
4. Distribute persuasive writing plan to students.
5. Re-read the news article and find key ideas to support your arguments.
6. Write these ideas on the white board.
7. Research topics such as sun protection, skin cancer prevention and ultraviolet (UV) radiation to support your argument with facts and statistics.
8. Discuss and further brainstorm arguments to add the whiteboard.
9. Students complete the hats in high school persuasive writing plan. Note: The plan can be further developed into a written persuasive text or presentation.
10. Students write a persuasive text about why hats should be worn in high school.

Key questions

- Why do you think students in high school did not have to wear a hat?
- Do you think it should be compulsory that students wear hats in high school? Why or why not?
- What health issues are portrayed in the newspaper article?
- What is your key message regarding why hats are important in high school?
- What other ways can you protect yourself from UV radiation?
- What are the differences between a cap and a broad-brimmed hat?
- What makes a hat SunSmart?

Aquinas students happy to wear hats

Phoebe Wearne

One of Perth's most prestigious boys' schools has made hats mandatory for its senior students, sparking calls from the Cancer Council WA for other high schools to follow suit.

The "no hat, no play" rule has been in place in primary schools for years, but Aquinas College is one of the first schools to make hats compulsory for secondary students while they are on school grounds.

Current Year 12 students at the Salter Point school have been spared having to wear the navy broad-brimmed headwear, but all students will wear hats during terms one and four from next year.

Deputy headmaster Frank Norton, who led the push for compulsory hats, said they had launched a skin cancer education campaign at the school before making students wear hats from the start of this month.

Mr Norton said there had been little resistance to the move and encouraged other schools to introduce similar policies.

"It has been easy here," Mr Norton said.

"It's a single-sex school.

Sun safety: Students from junior, middle and senior schools at Aquinas College will now have to wear hats for UV protection. Picture: Dione Davidson

"It's not a fashion parade. One in every two Australians has some issue with skin cancer at some time in their life. That's a bullet that's hard to dodge.

"Our motivation is all about the wellbeing of the boys."

Year 11 student Will Ross, 16, said many students had not welcomed the change at first, but they later accepted that the hats protected them from the sun and everybody had to wear them.

"It took people a couple of weeks and we got used to it," Will said.

Kaine Latta, 16, said he knew how important sun protection was because his father had suffered from skin cancer.

Cancer Council WA SunSmart manager Kerry O'Hare said students at all high schools in Perth should be encouraged to wear hats because of the high UV level for most of the year.

Ms O'Hare said that it was disappointing the valuable lessons in sun safety children learnt during their primary school years were often not followed through in high school.

"They are at school during peak UV times," Ms O'Hare said.

"As with any change it takes time to settle in, but ultimately what they are doing is protecting their kids and reducing their risk of developing skin cancer later in life."

The West Australian thewest.com.au
Thursday, March 21, 2013

Hats in High School - Persuasive Writing Plan

Topic Sentence:

Reason 1:

Reason 2:

Reason 3:

Concluding statement:

Lesson 3: Puppet Show

Background

In this lesson, students create puppets and develop a SunSmart story that will be presented to younger students. The aim is to help students understand the importance of sharing the SunSmart message to their younger peers and that being a positive role model can influence how younger students behave. Students can create characters for their puppets using SunSmart objects such as Simon Sunscreen and Hattie the Hat or Ronald the Rashie, etc.

Key messages

- Create a culture where sun protection is valued and recognised as part of health and safety
- Younger children look up to their older peers and are easily influenced by them. With older students, role modelling the five sun protection practices - Slip, Slop, Slap, Seek and Slide - their younger peers are more likely to copy and adopt these practices
- UV and heat are not the same thing
- The UV index can be 3 or above when it is cool and cloudy
- Broad-brimmed, legionnaire or bucket hats provide the best sun protection from UV radiation as they cover the face, neck, ears, and crown of the head
- Caps are not sun protective because they only protect your scalp and forehead
- SPF50 or SPF50+ broad-spectrum sunscreen offers the best protection because it protects the skin from both UVA and UVB radiation. Apply sunscreen generously 20 minutes before going outdoors and reapply every 2 hours, layer it and do not rub it in
- For best protection when the UV index is 3 or above, use all five forms of protection: clothing, sunscreen, a broad-brimmed hat, shade, and sunglasses.

Resources

- Recycled materials
- Range of art and craft materials
- SunSmart objects
- Generation SunSmart
- Optional: socks, gloves

Instructions

1. Ask key questions to generate discussion.
2. Organise students into small groups.
3. Brainstorm ideas about how to make their puppets and what the puppet show story could be about. Note: The puppet show must incorporate sun safety messages.
4. Plan, design, create and practice performing their puppet show.
5. Perform the puppet show.

Key questions

- What does it mean to be SunSmart?
- Why is it important to share the SunSmart message?

Lesson 4: Be a UV Legend

Background

In this lesson, students examine short videos of athletes spreading the UV and sun protection message. Students analyse the video campaigns and critique their effectiveness in spreading the message. The lesson is designed to focus on the importance and impact that positive role models have on children and young people in practicing sun protection behaviours. Students complete the activity sheet and select their own ambassador to spread the UV and sun protection message.

Key messages

- 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 practising sun protective behaviours in childhood and adolescence
- Skin damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day can have similar UV levels to a warm, sunny day
- Positive role models of sun protection behaviours, such as teachers, parents and ambassadors help to embed these strategies into healthy lifestyles of children and young people
- Younger children look up to their older peers and are easily influenced by them. Older students role modelling the five sun protection practices - Slip, Slop, Slap, Seek and Slide - means their younger peers are more likely to copy and adopt these practices.

Resources

- Be a UV Legend Sydney Sixers
- Be a UV Legend Sydney Thunder
- Football tackle UV with good sun protection
- Device or shared screen
- Activity sheet: Be a UV Legend Template
- Activity sheet: Be a UV Legend Ambassador

Instructions

1. Watch each video and take notes of interest.
2. Replay videos to ensure all elements can be critiqued.
3. Key questions and class discussion about each video.
4. Critique the video messages using the activity sheet.
5. Class discussion to share ideas.
6. Select two athletes or sport persons to be good ambassadors for the UV campaign.
7. Complete the activity sheet.
8. Present their ambassador to the class.

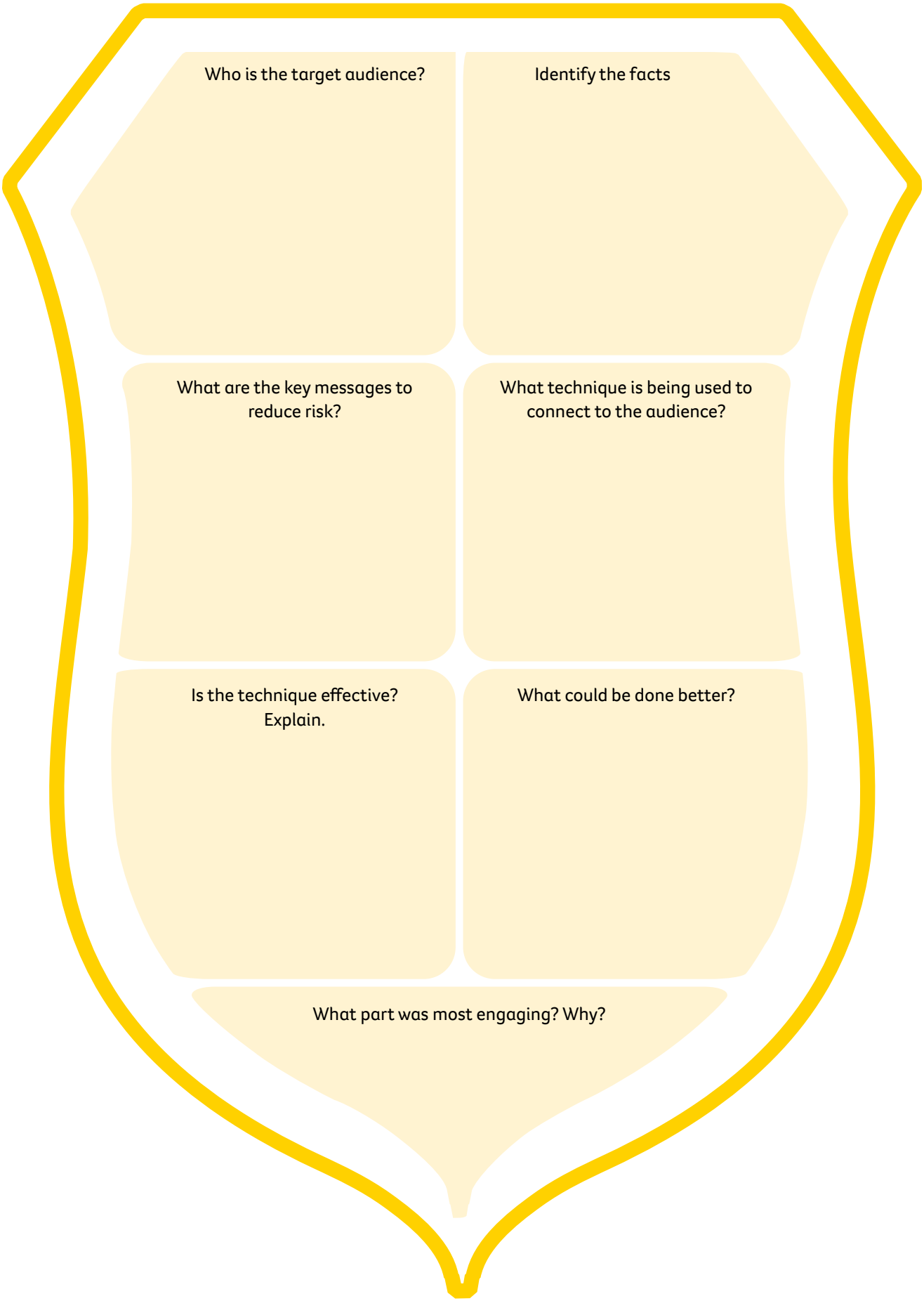
Key questions

- What are the key messages to reduce risk?
- What technique is being used to connect to the audience?
- Is the technique effective? Explain.
- Who is the target audience? How do you know?
- What could be done better? What part is most engaging?
- Why are role models so important in sun protection?

Activity Sheet: Be a UV Legend Template

Task

View the Be a UV Legend Sydney Sixers and Be a UV Legend Sydney Thunder videos. Critique the video message by completing the following questions.



Activity Sheet: Be a UV Legend - Ambassador

Task

Select two athletes or sports people that you think would be good ambassadors for the UV campaign. Complete the following questions.

Athlete - Sport ambassador - Who are they?

Draw a picture or glue a photograph here

What sport do they play? _____

How would they be a good ambassador?

_____

_____

_____

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How are they a positive role model?

_____

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Lesson 5: Urban Design

Background

The focus of this lesson is on the importance and role of shade in protecting our skin from UV radiation and understand the materials that provide the best protection. Students explore different types of shade. They examine the materials they are made from and classify them according to how well they block light. Students apply this knowledge to design and build a model shade structure.

Key messages

- Seeking shade is important to protecting our skin from UV
- Shade moves throughout the day and this can impact on planning outdoor activities and utilising sun protection
- Well designed and quality shade ensures that people are protected from direct and indirect UV radiation
- There are many types of shade for a range of purposes - built shade, permanent, demountable, natural shade canopies, fabric shade sails and portable shade structures
- Ultraviolet effectiveness (UVE) rating indicates how effective a shade fabric is at providing shade for sun protection. The rating is based on the percentage of UV radiation that is blocked by the shade fabric
- Different fabrics have different UV radiation absorbing properties such as darker colours usually block more UV radiation than lighter colours and less UV radiation passes through tightly woven fabrics.

Resources

- SunSmart: The Shade Handbook
- SunSmart: The benefits of quality shade
- Device or research texts
- Range of different materials e.g. glass, timber, steel/metal sheeting, woven PVC shade fabric, canvas or other tightly woven cloths and fibre glass sheeting
- Torch or UV torch

Instructions

1. Key questions and class discussion about the importance of shade in sun protection.
2. Research different shade structures and their materials. Refer to the shade handbook.
3. Classify objects according to how well they block light. Display a series of objects to the class and test them using the torch. Discuss the properties that block and absorb light.
4. Plan and design a shade space. Students design a structure (or model) that can block the sun to create a shaded area.
5. Design, build and test the structure to keep out the light and warmth of the sun.
6. Individual performance assessment: Students conduct a test to see if the shady spot is cooler

Key questions

- Why is it important to protect our skin from the sun?
- How does shade play a role in sun protection? Why is it important?
- What are the different types of shade? What are they made from?
- Which materials blocked the light?
- Which material will you be using to create your shade structure?
- What makes a good shade structure?

Lesson 6: Our School Sun and Shade Audit

Applying evidence-based data to action

Background

This is a useful activity for students (and staff) to recognise the degree of shade in commonly used areas at your school, such as where students eat their lunch. The activity is designed to encourage students to seek shaded areas for outdoor activities and eating areas. It reinforces the SunSmart message that seeking shade is one of five important strategies of preventing skin damage from ultraviolet (UV) radiation.

Key messages

- Seeking shade is important to protecting our skin from UV
- Shade moves throughout the day and this can impact on planning outdoor activities and utilising sun protection
- Whenever possible, make use of natural or built shade. Bring your own portable shade such as umbrellas, tents or marquees
- Sun protection practices should use a combination of Slip, Slop, Slap, Seek and Slide

Resources

- Activity sheet: Observation Record sheet
- SunSmart: The Shade Handbook
- SunSmart: The benefits of quality shade
- Clipboards
- Map of the school grounds
- Coloured pencils

Instructions

Observe

1. Visualise, identify and sort shapes and objects that are part of the school environment. Describe their key features in the environment according to the amount of sun and UV protection.
2. Walk around the school to audit and observe the amount of sun and shade on the different areas in the school.
3. Record shade and key features on the activity sheet and repeat at three different times of the day.
4. Construct a scaled map of the school and use a grid reference system to describe locations. Label to indicate buildings and outdoor areas.
5. Create a legend using well-shaded, needs good shade and could have better shade as three of your identifiers.
6. Mark on the map any area of the school that is from one of the three categories.

Calculate and interpret:

7. Display your data in a graph or a table and convert your data to percentages.
8. Explore efficient ways to calculate the perimeter of buildings or outdoor spaces.
9. Explore efficient ways of finding the areas of rectangles.
10. Calculate the total area of shaded and unshaded spaces in the school grounds.

Question:

11. Pose questions and collect data by observation or conduct a survey about the time of the day and the effect of the sun and UV radiation.
12. In pairs, students survey the school at three different times of the day to identify where and when different areas are in full sun or in the shade or protected from the sun.
13. Students record the areas of the school students mainly use.
14. Students identify areas of full sun exposure, partial, shade and record on their map using different colours for the times of the day.

(Continued on the next page)

Lesson 6: Our School Sun and Shade Audit

Applying evidence-based data to action

Apply:

15. Students identify which areas could be improved regarding reducing sun exposure. Discuss actions that could be done to improve sun safety and increase shaded areas.
16. Students explore practices that they can adopt and implement in the school setting to improve health and wellbeing of the class and reduce the sun exposure and UV risk.

Reflect:

17. Class presentation and debrief: Plan, rehearse and deliver a presentation on action areas.

Key questions

- Which areas are already well-shaded?
- Which areas need to have good shade?
- Which areas could have better shade?
- What did you discover by completing the sun and shade audit?
- Discuss how shady places feel – some are cooler, darker, warm, or light.
- Which areas need shade improvement? Why? What solution do you recommend?
- Why is it important to protect our skin from the sun?

Activity Sheet: Observation Record Sheet

Task

Fill in the table with at least five objects or spaces at 3 different times of the day:

Morning

Object-Space in the school environment	Shape	Key features

Midday

Object-Space in the school environment	Shape	Key features

Afternoon

Object-Space in the school environment	Shape	Key features

Lesson 7: UV Social Media

Background

Students create three social media posts to effectively engage students online and inform them of sun safety. These social media posts are intended to be in the style of an infographic. Infographics use striking, engaging visuals to communicate information quickly and clearly. Students are encouraged to understand and present different styles of social media graphics. This can include different formatting for social media platforms (Snapchat, Tik Tok, Instagram, Facebook, Twitter), different media types (GIF, infographic, video post, image-based posts).

Key messages

- 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 practising sun protective behaviours in childhood and adolescence
- Skin damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day can have similar UV levels to a warm, sunny day
- UV radiation and heat are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy
- Broad-brimmed, legionnaire and bucket hats provide the best sun protection from UV radiation as they cover the face, neck, ears and crown of the head. Caps are not sun protective because they only protect your scalp and forehead
- For best protection when the UV is 3 and above, use all five forms of protection: clothing, sunscreen, a broad-brimmed hat, shade and sunglasses
- There are many different health messages and information that can influence our health decisions and behaviours
- Look for information from credible sources to make informed decisions around sun protection.

Resources

- Social media content creation platforms such as Adobe, Canva or other design apps
- Student access to a device or shared screen.

Instructions

1. Ask key questions and introduce task to students.
2. Research SunSmart infographics. What do you notice about infographics? What is their purpose?
3. Encourage further research and learn about what makes an engaging social media post. Note: Target this towards what would be effective in informing students their age about sun safety, on social media.
4. Plan, design and create three infographics for social media posts about sun protection, targeted at their age-group.

Key questions

- Why is health education about sun protection important?
- What makes a social media post effective?
- How would you describe your demographic? How will this impact on the social media post?
- What are some of the barriers around sun protection that impact on this demographic? Such as peer pressure, tanning, caps on school uniform list rather than SunSmart hats.

Lesson 8: Two Sides of the Sun: Advert Analysis

Background

This SunSmart commercial is a valuable learning tool for Health and English lessons and promoting valuable SunSmart messages. Students can develop important healthy lifestyle choices through analysing and interpreting the advert.

Key messages

- SunSmart advertising campaigns aim to educate and raise public awareness about UV radiation and its impact on skin and skin cancer awareness
- The sun has two sides: A nurturing side and a dangerous side. When UV is 3 or above, protect yourself
- Skin damage is caused by ultraviolet (UV) radiation, not temperature. A cool or overcast day can have similar UV levels to a warm, sunny day
- Best sun protection practices are using a combination of Slip, Slop, Slap, Seek and Slide
- UV radiation and heat are not the same thing
- The UV Index can be 3 or above when it is cool and cloudy.

Resources

- Two sides of the sun SunSmart commercial
- Activity sheets: Two Sides of the Sun Advert Analysis

Instructions

1. Ask key questions to activate prior knowledge about sun protection.
2. Watch the commercial.
3. Discuss the purpose of the advertisement and target audience.
4. Complete the first two questions of activity sheet.
5. Replay the commercial with a focus on the personal impact the advert has students.
6. Discuss further using the Y chart as a guide.
    - What does the advertisement look like?
    - How does the advertisement make you feel?
    - What does the advertisement sound like?
7. Students complete the Y chart section of the activity sheet.
8. Replay the commercial and complete page two of the activity sheet. This section looks closely at the strategies and elements used to increase the effectiveness of the advert.

Key questions

- Why is UV protection important?
- What key messages did you find about sun safety?
- What drives health promotion sun safety messages?
- Why do they want people to know this message?
- What mode of communication was most common?
- Which mode of communication was most effective?
- Were there any gaps in information? If yes, what were they?

Activity Sheet: Two Sides of the Sun: Advert Analysis

Task

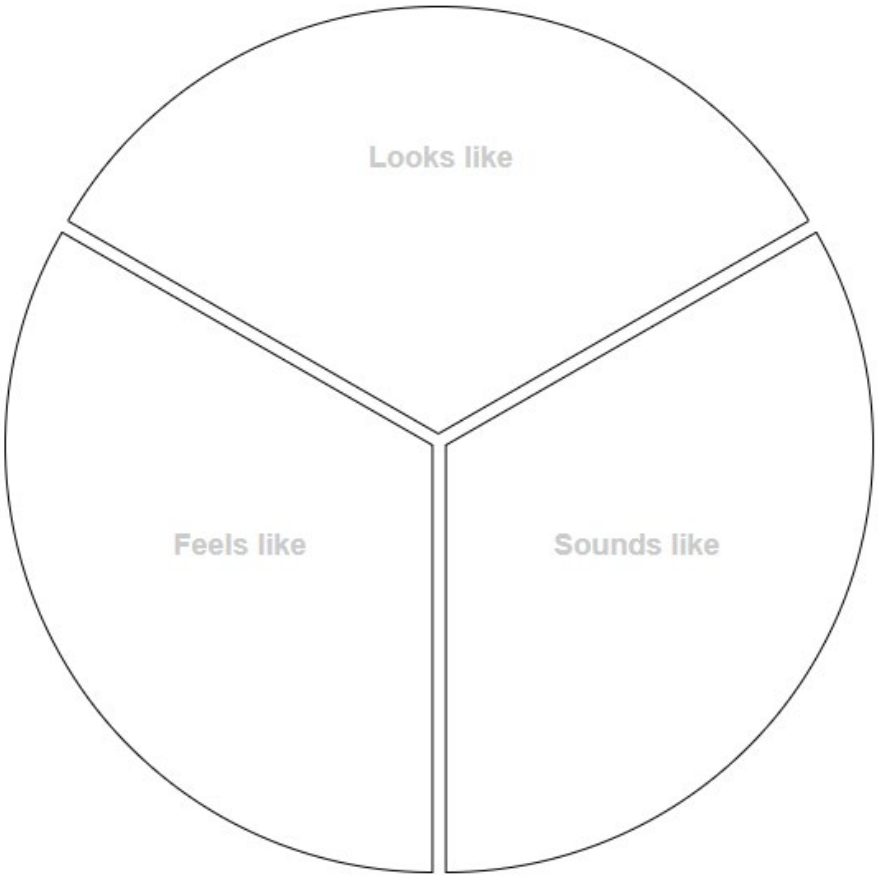
Analyse the Two sides of the sun SunSmart commercial and complete the following questions.

Explain the purpose of the advertisement:

Describe the target audience:

Complete the following Y chart explaining your personal response to the advertisement:

- **Looks like:** What does the advertisement look like? (Dark or bright, slow or fast, close up or far away)
- **Feels like:** How does the advertisement make you feel? (Worried, concerned, happy, sad)
- **Sounds like:** What does the advertisement sound like? (Quiet, gentle, loud, soft music)



Visual language in relation to images chosen (e.g. point of view, angles, salience, layout, colour, lines and vectors)	
How the visual language contributes to effectiveness of the advertisement?	**How the visual language contributes to the key messages?**

Lesson 9: SunSmart Relay

Background

This is a fun activity that involves students exchanging SunSmart clothing and items instead of a baton. Students must Slip on a long sleeve shirt, Slop on sunscreen (carry the bottle), Slap on a broad-brimmed hat, Seek shade by opening an umbrella and Slide on some sunglasses before they can run to the next opponent and repeat the process.

Physical literacy elements include:

- Object manipulation
- Accuracy and speed
- Strategy and tactics
- Hand eye coordination
- Reflexes
- Stability and balance
- Motivation
- Coordination
- Self-regulation (emotions)
- Rules
- Reasoning

Resources

- Large long sleeve shirts to fit over student's uniform (easy to put on and off)
- Bottles of sunscreen
- Broad-brimmed hats
- Umbrellas
- Sunglasses
- Hoops

Instructions - How to play

1. Divide students into teams of four or more.
2. On command, one member from each team puts on all the SunSmart items and then runs to the opposite end and places all the SunSmart items in the hoop and tags the next team member.
3. Next runner for each team may only proceed once they have been tagged by their teammate and put on all the SunSmart items.
4. The game continues until all team members have completed their turn.
5. The winning team is the first to shout the SunSmart message: Slip, Slop, Slap, Seek, Slide!

Variation

- Students may bring in their own items.
- Students carry the sunscreen mini tube instead of applying.

When completing activities and lessons outdoors when the UV Index is 3 or above, please remember to be SunSmart