

Big Rain Coming: Weather watching – Science

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The term Aboriginal refers to Aboriginal and Torres Strait Islander people.

Theme

The environment

Year

Pre-primary

Featured text

Big Rain Coming



About this resource

Weather watching is a series of lessons about the weather inspired by the picture book *Big Rain Coming* by Katrina Germein and Bronwyn Bancroft. Opportunities are provided for children to develop literacy and numeracy skills through observing and recording the weather, learning about safety in the sun and investigating where the Sun is hottest in the playground. *Weather watching* is connected to an integrated program called *Big Rain Coming*.

Lessons include:

- reading *Big Rain Coming* and identifying weather features and vocabulary
- making ‘raindrops’ in different ways
- completing a weather watch chart
- modelling how to make a weather chart for the week of events in *Big Rain Coming* using symbols from the Bureau of Meteorology. Children use this as a model to create their own *Big Rain Coming* weather chart using their own symbols
- discussing sun safety using an illustration from *Big Rain Coming* as a stimulus, creating a ‘Sun safety rules’ chart and supporting children as they make posters illustrating sun safety rules for display in class
- conducting an investigation to find the hottest place in the playground

Phase of Learning				
Early Childhood	Middle Childhood	Early Adolescence	Late Adolescence	
PP				
Learning Area				
Science				
Values				
Pursuit of knowledge & commitment to achievement of potential	Self acceptance & respect of self	Respect & concern for others & their rights	Social & civic responsibility	Environmental responsibility
x				

This resource includes:

- learning/teaching activities and monitoring linked to the *Early Childhood (K-3) Syllabus* scope and sequence
- required resources for each lesson
- worksheets.

Pre-primary

Advice to teachers**The learning, teaching, assessment cycle**

The learning, teaching, assessment cycle begins with what the children know and can do. Therefore it is recommended that teachers gather quality information about the abilities of their children before beginning any program of work. This information will guide teachers in using their professional judgement to decide on when to introduce content based on children's prior learning and achievement.

The following resources are recommended to assist teachers in providing a differentiated curriculum for children in their classes and can be found via the Department portal:

- *Early Childhood (K-3) Syllabus* scope and sequence documents provide advice on what to teach children at each year level in all eight learning areas. Some pre-primary children may be ready to learn and be taught content for Year 1.
- *Literacy and Numeracy Resources* (Resource ID: DETK103602) are practical resources that have been developed to support teachers to improve the literacy and numeracy skills of children.
- *Numeracy Net* can be used to track the development of children and assist teachers in making judgements about what to teach.
- *First Steps Numeracy* materials help teachers to be more strategic about what to teach, how to teach it, when to teach it and, more importantly, why.
- *ESL/ESD Progress Map* describes progress made in Standard Australian English by children for whom English is a second language or second dialect and enables teachers to monitor the development of children's knowledge, skills and understandings in acquiring Standard Australian English.

Supporting Aboriginal children

Aboriginal children generally enter the school learning environment with a rich cultural background and as proficient communicators in their home language. While some children may have little or no understanding of English, others may understand and use an English dialect (Aboriginal English). Aboriginal children are more likely to thrive in a classroom in which their cultural background and home language is acknowledged and respected.

Immersion in oral language in intended teaching and play contexts enhances the ability of Aboriginal children to learn in Standard Australian English (SAE). Continually rephrasing and restating and providing visual cues in the form of photographs, illustrations and demonstrations increase the likelihood of children understanding and participating in explanations, discussions and conversations in SAE.

Aboriginal children may need support in asking and responding to direct questions because they are more familiar with indirect ways of sharing information. Providing explanations using vocabulary that may be unfamiliar to the children before asking direct questions is one strategy that can be used to ensure that every child has the opportunity to respond and experience success (eg *This is the title. The title tells us the name of the story. What is this?*) Aboriginal children are more likely to respond to questions if they understand why they are being asked them (eg *I want to know what you know, I do not know a lot about 'home talk' so I need you to tell me*).

For further information about Aboriginal English and implications for the teaching of Aboriginal children, teachers are advised to refer to:

Two-way English: Towards more user-friendly education for speakers of Aboriginal English available through the Department of Education, Western Australia.

Resources used in the lessons

Books

Bancroft, B & Germein, K 1999, *Big Rain Coming*, Roland Harvey Books, Port Melbourne, Vic.

Australian Academy of Science 2005, *Weather in my world*, PrimaryConnections®: Linking science with literacy. Early Stage 1, Earth and Beyond, Canberra, ACT.

Website

PrimaryConnections®, *Weather in my world*

<http://www.science.org.au/primaryconnections/curriculum-resources/weather-in-my-world.html>

Digital

Howitt, C & Blake, E (Ed) 2010 *Planting the Seeds of Science: A flexible, integrated and engaging resource for teachers of 3 to 8 year olds*. Australian Learning and Teaching Council Ltd: Surrey Hills, New South Wales.

Teachers should use their professional judgement to decide how much of the content to address with any particular class.



Teaching focus

The teaching focus for *Weather watching* consists of scope and sequence statements from the pre-primary year level of the *Early Childhood (K-3) Syllabus*. Teachers will continue to make professional judgements about when to introduce content based on children's prior learning and achievement.

Science	
EARTH AND BEYOND	INVESTIGATING
<p>Sustainability of life and wise resource use</p> <p>Weather and the seasons</p> <ul style="list-style-type: none"> characteristics of weather <p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> safety issues concerning the Sun (<i>eg do not look directly at the Sun, wear hats in the sun</i>) 	<p>Planning: Preparing for an investigation</p> <ul style="list-style-type: none"> to develop investigation skills through instructive play and experiential learning <p>Conducting: Collect and record information relevant to the investigation</p> <ul style="list-style-type: none"> use the senses to gain information <p>Processing Data: Processing and translating information to find patterns and draw conclusions</p> <ul style="list-style-type: none"> to share observations using first-hand experiences <p>Evaluating: Reflecting on an investigation, evaluating the processing and generating further ideas</p> <ul style="list-style-type: none"> share thoughts and feelings about discoveries



What will I do in my classroom?

This section contains a series of detailed learning and teaching activities and supporting resources with a Science focus.

Science		
Teaching focus Links to Scope and Sequence	Activities and Monitoring	Resources
Earth and Beyond		
<p>Sustainability of life and wise resource use – Weather and the seasons</p> <ul style="list-style-type: none"> characteristics of weather <p>English: Reading – Conventions – Word Conventions</p> <ul style="list-style-type: none"> vocabulary, including environmental print (eg <i>labels, names, rhyme charts, happy birthday</i>), personally significant words and very common sight words including 'a', 'I', 'the' 'and', 'is', 'to' 	<p>Shared reading - <i>Big Rain Coming</i></p> <p>Whole class</p> <ul style="list-style-type: none"> Before reading: Show the children the cover of <i>Big Rain Coming</i> and read the title. Ask, 'Does it look as though "big rain is coming" in the illustration? Why? Why not?' Look at the illustrations in the book without reading the words and ask, 'What makes you think there is "big rain coming"?' Ask, 'Do you think there is "big rain coming" outside? Why? Why not?' Take the children outside to allow them to experience the weather. Ask questions such as, 'How does your skin feel? How does your skin feel on a really hot/cold day?' Make cardboard frames or demonstrate how to make a frame with your hands to look through at the sky. Ask the children to copy you. Warn them not to look at the Sun because it might damage their eyes. Ask, 'What do you see? Do you think there is "big rain coming" at our school? Why? How would you know? What would you see?' On returning to class, ask the children to listen for words about the weather as you read <i>Big Rain Coming</i>. During reading: Read <i>Big Rain Coming</i>, accentuating the 'weather' words. After reading: Ask the children to identify any words about the weather from <i>Big Rain Coming</i>. List the words under the heading 'Weather' on the word wall. Read the weather words from <i>Big Rain Coming</i> (rain, warm, cool, breeze, clouds, thunder) and ask children to role play what it would be like to experience the weather condition. Verbalise how you feel and what you think 	<p><i>Big Rain Coming</i></p>

Pre-primary

	<p>about it. Add other 'weather' words to the word wall.</p> <p>Monitoring: Note the children who are able to read the weather words during print walks.</p>	
Earth and Beyond		
<p>Sustainability of life and wise resource use – Weather and the seasons</p> <ul style="list-style-type: none"> characteristics of weather <p>English: Reading – Conventions – Word Conventions</p> <p>vocabulary, including environmental print (<i>eg labels, names, rhyme charts, happy birthday</i>), personally significant words and very common sight words including 'a', 'l', 'the', 'and', 'is', 'to'</p>	<p style="text-align: center;">Making raindrops</p> <p style="text-align: center;">Small group</p> <ul style="list-style-type: none"> Demonstrate how to make raindrops using water and a straw. Insert a straw into a deep container of water, place a thumb over the top of the straw to contain the water inside it, move the straw to a plastic sheet and release the thumb to allow a drop to fall. Release a drop onto a plastic sheet and ask, 'What do you see? What did the raindrop do? Where did the water go?' Allow the children to experiment with the straw and water to make 'raindrops'. Encourage them to use words such as raindrop, splash and puddle to describe what they see. Provide eye droppers for the children to experience a different way of making raindrops. Provide a different surface such as sand in a tray or in the sand pit on which the children can release raindrops. Ask the children what they notice when they release raindrops on sand. Ask, 'How is it different from what happens when raindrops fall on plastic? Why do people sometimes wear clothes made out of plastic?' Provide raindrop templates for the children to trace around and cut out. Ask each child to write a weather word in a raindrop. Display the raindrops in the classroom and read the words during print walks. 	<p>Water in deep containers Straws Eye droppers Plastic sheet or tablecloth Sand</p>
Earth and Beyond		
<p>Sustainability of life and wise resource use – Weather and the seasons</p> <ul style="list-style-type: none"> characteristics of weather <p>Mathematics: Measurement – Understand units and direct measure –Direct Measure Time is measured</p>	<p style="text-align: center;">Class weather chart</p> <p style="text-align: center;">Whole class</p> <ul style="list-style-type: none"> Tell children they will be recording what the weather is like on a class weather chart every school day (Monday – Friday). Show them the blank weather watch chart (A3) from <i>Weather in my world</i> and discuss the meaning of morning and afternoon. Show the children the space on the chart where the weather word goes. Show children the weather symbols from the PrimaryConnections® website and the space on the weather chart where the weather symbol goes. 	<p>Weather symbols used by the Bureau of Meteorology resource sheet 2 and Weather watch resource sheet 3 <i>Weather in my world</i>, PrimaryConnections® found at: science.org.au/primaryconnections/curriculum-resources</p>

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<ul style="list-style-type: none"> particular things happen at particular times 	<ul style="list-style-type: none"> Set up a weather watching roster so that everyone gets a turn at recording the weather. Assist the weather watchers to complete the weather chart each morning and afternoon. <p>Monitoring: Note the children who suggest weather words and symbols that accurately describe the weather.</p>	
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Earth and Beyond

<p>Sustainability of life and wise resource use – Weather and the seasons</p> <ul style="list-style-type: none"> characteristics of weather <p>English: Viewing – Processes and Strategies</p> <ul style="list-style-type: none"> ways to ask and respond to questions to make meaning of visual texts 	<p style="text-align: center;">Big Rain Coming weather chart</p> <p style="text-align: center;">Whole class</p> <ul style="list-style-type: none"> Show the children a blank weather chart and tell them they are going to make a weather chart for <i>Big Rain Coming</i>. Show them the weather symbols used by the Bureau of Meteorology and discuss the meaning of each symbol. Show the children the illustrations for each day in <i>Big Rain Coming</i> and ask: ‘What is the weather like? How do you know?’ Ask children to suggest which symbols to put on the weather chart for each day. Read the text and add weather words to the chart under the symbols (eg <i>dark clouds, no rain, thick grey clouds, thunder, and rain</i>). Complete the weather chart and ask children, ‘What was the weather like on Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday? Were there any other days that had the same weather as Saturday? Which days had the same weather? Which days had different weather?’ Remind children to refer to the chart to find the information. Invite some children to ask questions about the weather chart (eg ‘What was the weather like on Saturday?’) for others to answer. <p>Monitoring: Note the children who are able to ask and respond to questions about the weather chart.</p>	<p><i>Big Rain Coming</i> Blank weather chart Whiteboard Weather symbols used by the Bureau of Meteorology resource sheet 2, <i>Weather in my world</i>, PrimaryConnections® found at: science.org.au/primaryconnections/curriculum-resources</p>
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Earth and Beyond

<p>Sustainability of life and wise resource use – Weather and the seasons</p> <ul style="list-style-type: none"> characteristics of weather <p>English: Writing – Contextual Understandings</p>	<p style="text-align: center;">Making Big Rain Coming weather charts</p> <p style="text-align: center;">Whole Class/Small group</p> <ul style="list-style-type: none"> As a class, complete the class weather chart for the day. Read the text of <i>Big Rain Coming</i> for that day and record the weather on the <i>Big Rain Coming</i> weather chart. Compare the weather at school with the weather in the book. In small groups, give children their own blank <i>Big Rain Coming</i> weather charts. 	<p><i>Big Rain Coming</i> blank weather chart</p>
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<ul style="list-style-type: none"> writers use written symbols and drawings to communicate ideas and messages 	<ul style="list-style-type: none"> Direct the children to use weather words from the class <i>Big Rain Coming</i> weather chart and drawings of weather symbols to record the weather on Sunday and Monday on their <i>Big Rain Coming</i> weather charts. While the children are working, read some of the children’s charts to demonstrate that writers use written symbols and drawings to communicate ideas (eg <i>I know what the weather was like on Monday because the chart has a sun on it and the words say, ‘No rain’</i>). Invite another adult to read some of the children’s weather charts to find out what the weather was like on Sunday and Monday <p>Note: Repeat this lesson for each day of the week and compare the weather at school with the weather in <i>Big Rain Coming</i>. On Friday the children will need to record the weather from <i>Big Rain Coming</i> for Saturday.</p> <p>Monitoring: Note the children who are able to respond to the question: ‘What have you used to describe the weather in <i>Big Rain Coming</i>?’ (words and drawings).</p>	
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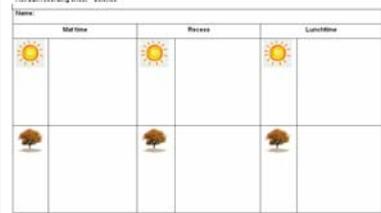
Earth and Beyond

<p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> safety issues concerning the Sun (eg <i>do not look directly at the Sun, wear hats in the Sun</i>) 	<p style="text-align: center;">Sun safety rules Whole class</p> <ul style="list-style-type: none"> Show the children the Sunburnt man photo and ask questions such as, ‘Why is this man squinting? How do you think the man feels? What do you think happened to the man? How do we know this man has been out in the Sun?’ Ask the children if they have ever been sunburnt. Ask them what it felt like and what it looked like. Show the children the page in <i>Big Rain Coming</i> with the illustration of Old Stephen wearing his hat, long sleeved shirt and long pants. Ask the children, ‘Do you think Old Stephen is going to get sunburnt? Why? Why not? What is Stephen wearing to protect himself from getting burnt by the Sun?’ Direct the children’s attention to the Sunburnt man photo and ask them what the man could do to protect his eyes. List suggestions on a Sun safety rules chart. Warn the children against looking directly at the Sun. Ask the children what they could do to protect their skin from the Sun and add their suggestions to the Sun safety rules chart (eg <i>Wear a hat in the Sun. Play in the shade. Wear sunglasses.</i>) Read the rules together. 	<p><i>Big Rain Coming</i> Sunburnt man photo Sun safety rules chart</p> 
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Pre-primary

Earth and Beyond		
<p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> safety issues concerning the Sun (<i>eg do not look directly at the Sun, wear hats in the Sun</i>) 	<p>Sun safety picture talks Small group</p> <ul style="list-style-type: none"> Give each child a Sun safety picture and ask them to look at the pictures and think about how the children are protecting themselves from the Sun. Then ask the children to share their pictures with their partners. Ask each child to tell the group about their pictures. Discuss any new rules that could be included on the Sun safety rules chart. Demonstrate each rule using a child or a doll as a model. Ask the children to choose one of the Sun safety rules (<i>eg Wear a hat in the Sun. Play in the shade. Protect your eyes from the Sun. Put sun screen on.</i>) Invite the children to copy the rule from the chart on a Rule strip and paste it onto an A3 sheet of paper. Ask each child to read the rule and then illustrate it. On completion, children could show their posters and read the Sun safety rules to another class. Display the posters in the class or in other classes. <p>Monitoring: Note the children who can suggest a sensible Sun safety rule.</p>	<p>Sun safety rules chart Sun safety pictures Rule strips</p> 
Earth and Beyond Investigating		
<p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> safety issues concerning the Sun (<i>eg do not look directly at the Sun, wear hats in the Sun</i>) <p>Planning</p> <ul style="list-style-type: none"> to develop investigation skills through instructive play and experiential learning 	<p>Melting iceblocks Whole class</p> <ul style="list-style-type: none"> Give the children a small iceblock each to hold in their hands. Ask, 'How does it feel? What is happening to the iceblock?' Take the children outside to observe their iceblocks melting. Ask, 'Where in the playground do you think the iceblocks will melt the fastest?' Encourage the children to suggest places in the playground where they think the iceblocks would melt the fastest and the slowest. Ask the children to vote for the hottest spot in the playground and place a red marker there. Then ask them to vote for the coolest spot in the playground and place a blue marker there. Bring the children together and ask, 'How can we show that it is hotter in the "hot spot" than it is in the "cool spot" using ice blocks?' Return to class and complete the first section of an A3 copy of the Hot Sun planner by writing a response to the question, 'What do we want to find out?' 	<p>Small iceblocks Hot Sun planner</p> 

Pre-primary

(Where will an iceblock melt faster?)		
Earth and Beyond Investigating		
<p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> safety issues concerning the Sun (<i>eg do not look directly at the Sun, wear hats in the Sun</i>) <p>Planning</p> <ul style="list-style-type: none"> to develop investigation skills through instructive play and experiential learning 	<p>Planning an investigation</p> <p>Whole class</p> <ul style="list-style-type: none"> Show the children the Hot Sun planner and discuss the investigation to find out where an iceblock will melt faster. Discuss the question, 'What will we do?' and record a response on the Hot Sun planner (<i>eg Put iceblocks in the 'hot spot' and the 'cool spot'</i>). Discuss the question, 'What will we compare?' and record a response on the Hot Sun planner (<i>eg The amount of iceblock left in the 'hot spot' and the 'cool spot'</i>). Discuss the question, 'What will we need?' and record a response on the Hot Sun planner. Ask the question, 'What do we think will happen?' Ask, 'Where do you think the iceblock will melt faster? Why?' Ask the children to vote by standing near the blue marker or the red marker. Record on the Hot Sun planner the place most of the children selected. 	<p>Hot Sun planner</p>
Earth and Beyond Investigating		
<p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> safety issues concerning the Sun (<i>eg do not look directly at the Sun, wear hats in the Sun</i>) <p>Conducting</p> <ul style="list-style-type: none"> use the senses to gain information 	<p>Conducting – Recording melting iceblocks</p> <p>Small groups</p> <ul style="list-style-type: none"> In preparation for this lesson freeze two cups full of water in two plastic containers of the same size. Print A3 copies of the Hot Sun recording sheet and collect clip boards and pencils for each child in the group. Tell the children they are going to be scientists and observe how much the iceblocks melt in the 'hot spot' and the 'cool spot' at different times (<i>eg after mat time, at recess and at lunchtime</i>). Ask them how they will know where it is hotter. Talk to the children about how important it is for scientists to be good observers. Ask the children to write their names on the Hot Sun recording sheet. Give them a clipboard and a pencil. Show the children the iceblocks in the plastic containers labelled 'hot spot' and 'cool spot'. Talk about the shape of the iceblocks. Take the children outside. Ensure they have hats on to protect their heads and 	<p>Two plastic containers Iceblocks Hot Sun recording sheet Camera</p> 

Pre-primary

	<p>faces from the hot Sun.</p> <ul style="list-style-type: none"> • Direct children to place one iceblock in the ‘hot spot’ and the other iceblock in the ‘cool spot’. Show them where to draw the shape of the iceblock in each location on the Hot Sun recording sheet. • Take photos of the iceblocks in each location. • Ask questions such as, ‘What do you notice about the iceblocks?’ • Return to the classroom and ask the children to colour the iceblock blue and any melted water red. • Repeat this process for Observations 2 at recess and Observation 3 at lunchtime. <p>Note: Make Observations 2 and 3 at times when changes are likely to be evident. This will depend on the weather in your location.</p>	
<p>Earth and Beyond Investigating</p>		
<p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> • safety issues concerning the Sun <i>(eg do not look directly at the Sun, wear hats in the Sun)</i> <p>Processing Data</p> <ul style="list-style-type: none"> • to share observations using first-hand experiences <p>Evaluating</p> <ul style="list-style-type: none"> • share thoughts and feelings about discoveries 	<p style="text-align: center;">Sharing observations Small groups</p> <ul style="list-style-type: none"> • Display the photos taken of the iceblocks in the ‘hot spot’ and the ‘cool spot’ during each observation. • Ask the children what they notice about the size of the iceblocks in each location at each observation time. • Ask the children to compare the photos to their drawings on the Hot Sun recording sheets. • Ask questions such as, ‘Which iceblock melted faster? Why? Where do you think it was hotter? Was your prediction correct?’ • Complete the Hot Sun planner by recording a response to the question, ‘What happened?’ • Ask, ‘Where can you go in the playground to keep cool? Why is it cooler there? Why is it important to stay out of the hot Sun?’ Record the children’s responses to display in the classroom with the photos, the Hot Sun planner and the children’s Hot Sun recording sheets. 	<p>Hot Sun recording sheets Photos Hot Sun planner</p>
<p>Earth and Beyond Investigating</p>		
<p>Relationship between the Earth, our Solar System and the Universe</p> <ul style="list-style-type: none"> • safety issues concerning the Sun <i>(eg do not look directly at the Sun,</i> 	<p style="text-align: center;">Making icy poles last longer Whole class</p> <ul style="list-style-type: none"> • Tell the children they will be going outside into the playground for a surprise. Ask them what they will need to do to protect them from the hot Sun. 	<p>Icy poles</p>

Pre-primary

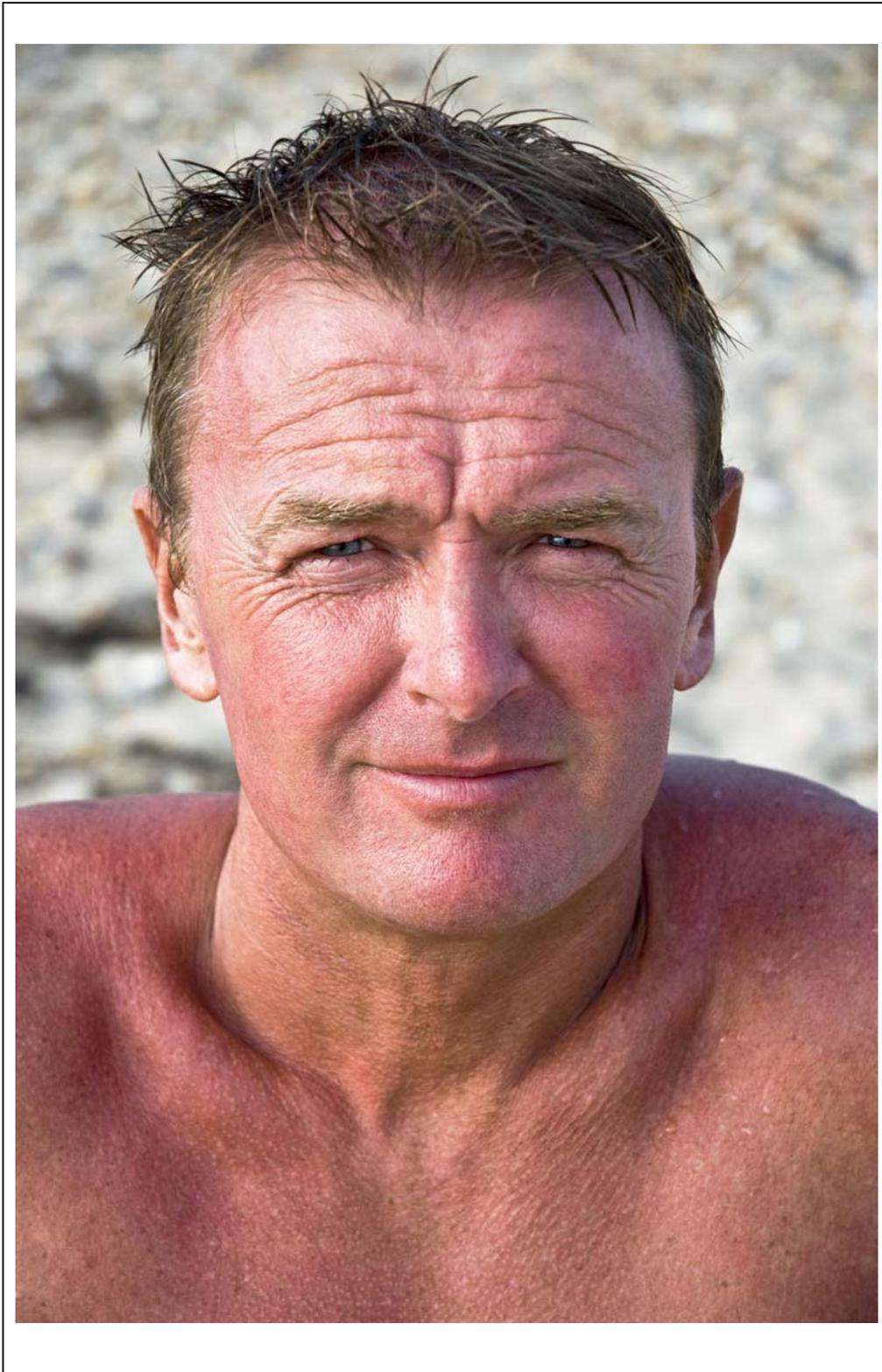
<p><i>wear hats in the Sun)</i></p> <p>Evaluating</p> <ul style="list-style-type: none"> • share thoughts and feelings about discoveries 	<ul style="list-style-type: none"> • Once outside, show the children the icy poles. Tell them you want to find out who can make their icy pole last the longest. • Observe where the children go to eat their icy poles and what they do to make them last longer. • Identify the children who made their icy poles last longest. Bring the children together and discuss what they did and where they went in the playground. • Ask, ‘How did our investigation help you to make your icy pole last longer? What did you like about being a scientist?’ 	
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Big Rain Coming weather chart

Big Rain Coming weather chart

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Sunburnt man photo

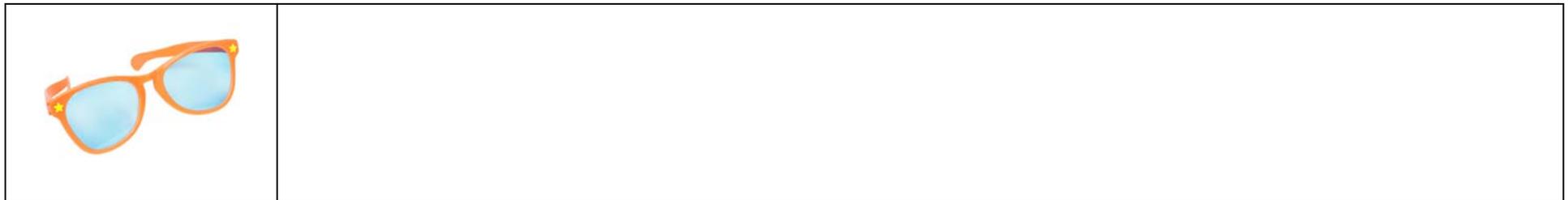


Sun safety pictures



Pre-primary

Rule strips



Hot Sun planner

What do we want to find out?	
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What will we do?	What will we compare?	What will we need?
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What do we think will happen?	What happened?
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Hot Sun recording sheet

Name:					
Mat time		Recess		Lunchtime	
					
					