

[Narrator] You may wonder why seasons change. Throughout the year sometimes it is freezing cold, but sometimes it is burning hot. This video will explain why seasons happen. Hope you enjoy it!

Screen: Video Camera

[Narrator] Let's look at how people feel in Sydney and in New York when it is June.

Screen: Earth around Sun position

Transition: In New York

[New York person] Oh, it's really hot here! It's 30 degrees Celsius! Back in my house with the AC on is so much better.

Screen: Video Camera

Transition: In Sydney

[Sydney person] Oh, it's freezing cold here! Negative 10 degrees Celsius! I'm in my warmest jacket and have my cap on, but I'm still freezing! I can't wait to get back to my warm house.

Screen: Video Camera

[Narrator] Well, we can see that on the Northern hemisphere it is summer and on the Southern hemisphere, it is winter. Let's look at why this happens.

Screen: Video Camera

[Narrator] When the Earth is in this position, the Northern hemisphere receives sunlight at a high angle, so it gets a lot of heat energy. That's why it is hot and summer on the Northern hemisphere.

Screen: high angle sun image

[Narrator] But let's look at the sunlight on the Southern hemisphere.

Screen: Video Camera

[Narrator] As we can see, the Southern hemisphere receives sunlight at a low angle and it gets only a little heat energy. That's why it is cold and winter on the Southern hemisphere.

Screen: low angle sun image

[Narrator] Now, let's see how these people feel a quarter year later.

Screen: Video Camera

Transition: Earth is moving around the Sun

Transition: In New York

[New York person] The weather here is just fine. It isn't hot nor cold. This is the perfect temperature!

Screen: Video Camera

Transition: In Sydney

[Sydney person] I love this weather! It is just fine. I don't have to run the AC nor the heater. It is 22 degrees Celsius.

Screen: Video Camera

[Narrator] Currently, it is autumn in the Northern hemisphere and spring in the Southern hemisphere.

Screen: Video Camera

[Narrator] The Northern and the Southern hemisphere are all getting sunlight at a medium angle. That's why the temperature in Sydney and also in New York is about 22 degrees Celsius.

Screen: medium angle sun image

Transition: 90 days later

[Narrator] Here is the Earth 90 days later.

Screen: Earth's position around the Sun

[Narrator] Let's see how people feel in New York and Sydney.

Screen: Video Camera

Transition: In New York

[New York person] It is really cold, but it's the best day for skiing! I'm going to Lake Tahoe! I'm sure lot of people are skiing there already.

Screen: Video Camera

Transition: In Sydney

[Sydney person] It is so hot here! I nice day to go to the beach. Let's check Google Maps for a good beach... Bondi beach! I'm going to Bondi beach! Oh, I think I should apply some sunscreen! I'm going to the beach and will have lots of fun!

Screen: Video Camera

[Narrator] As you could see, it is winter in New York and summer in Sydney.

Screen: Video Camera

[Narrator] In New York it is winter because the Northern hemisphere receives sunlight at a low angle. That means, it receives just a little heat energy and it is cold.

Screen: low angle sun image

[Narrator] But in Sydney it is summer since the Southern hemisphere receives sun at a high angle, so it receives a lot of heat energy and it is summer

Screen: high angle sun image

Transition: Earth moving around the Sun

[Narrator] It is March 19th! Let's see again how people feel in New York and Sydney.

Screen: Video Camera

Transition: In New York

[New York person] Finally it's spring! The winter was so cold! But fortunately, it also isn't as hot as it would be in the summer. It's 22 degrees Celsius.

Screen: Video Camera

Transition: In Sydney

[Sydney person] It's autumn! Summer was so hot. The heatwaves were so bad! It's the perfect temperature again: 22 degrees Celsius.

Screen: Video Camera

[Narrator] In New York and in Sydney it is 22 degrees Celsius again. They have the same temperature. Let's look at why this happens.

Screen: Video Camera

[Narrator] Just as it was half a year before, the Northern and Southern hemisphere all receive sunlight at a medium angle. This way, the temperature in each hemisphere will be comfortable.

Screen: medium angle sun image

[Narrator] You might wonder what causes the hemispheres to receive sometimes sun at different angles. This is because the Earth's axis is tilted 23.5 degrees. Let's look at how this affects the angle of the sun.

Screen: Video Camera

[Narrator] These lines show which part of the Earth receives sunlight at a high angle throughout the year. You can see that as the Earth moves around the Sun different parts of it will receive sunlight at a high angle. In June, the Northern hemisphere receives sunlight at a high angle, in December the Southern hemisphere receives sunlight at a high angle. In March and September, the equator receives sunlight at a high angle and the two hemispheres all receive sunlight at a medium angle.

Screen: Earth seasons image