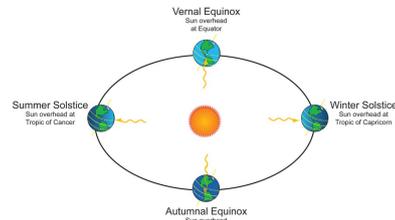


Solstice/Equinox worksheet

Season is a division of the year marked by changes in hours of daylight (as well as ecology and weather). Seasons result from the yearly revolution of the Earth around the Sun and the tilt of the Earth's axis (relative to the plane of revolution). Find out when these changes occur in Melbourne, Australia, 2014.

1. First choose an event (solstice/equinox)
Circle the event in this diagram



To find out the date it occurs go to:

<http://www.timeanddate.com/worldclock/sunearth.html?iso=20140320T1656>

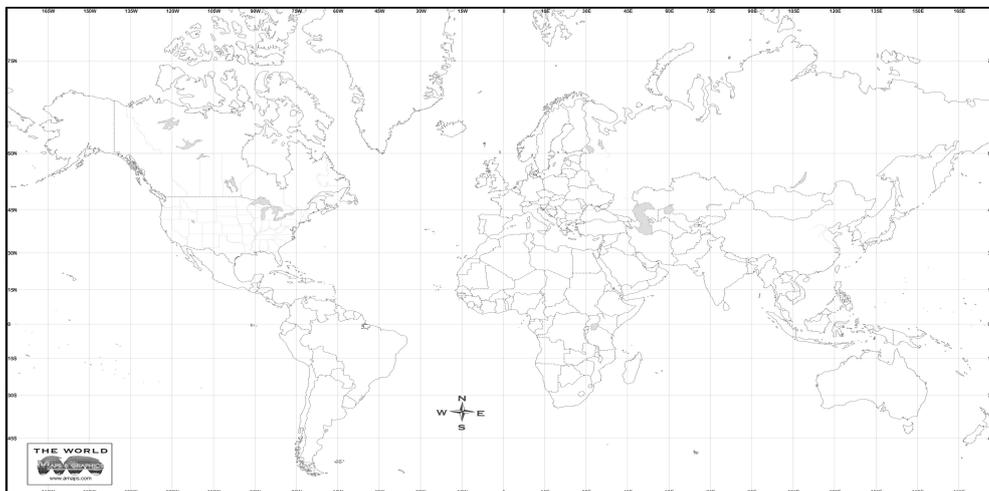
2. Select the event (solstice/equinox) from the 'change time and date' box, then set the location to Melbourne, Australia in the right hand side of the box.
3. Note the name of the event, the date, time of the event (local time for Melbourne)
5. Shade the diagram:

Event: _____ equinox.

Date: _____ 2014.

Time event occurs at _____ Melbourne (local time).

The parts of the Earth that are in daylight and in darkness are:



Sunrise: _____ Sunset _____ in Melbourne, Australia.

Length of day _____.

6. To extend this activity find out and note the time of sunrise and sunset for Melbourne as well as the length of day from the following website:

<http://www.timeanddate.com/worldclock/astronomy.html?n=152>

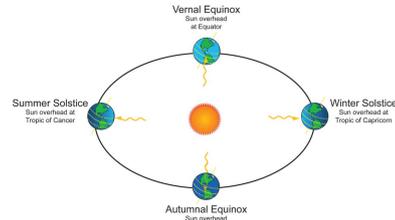
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- scroll down to the correct date
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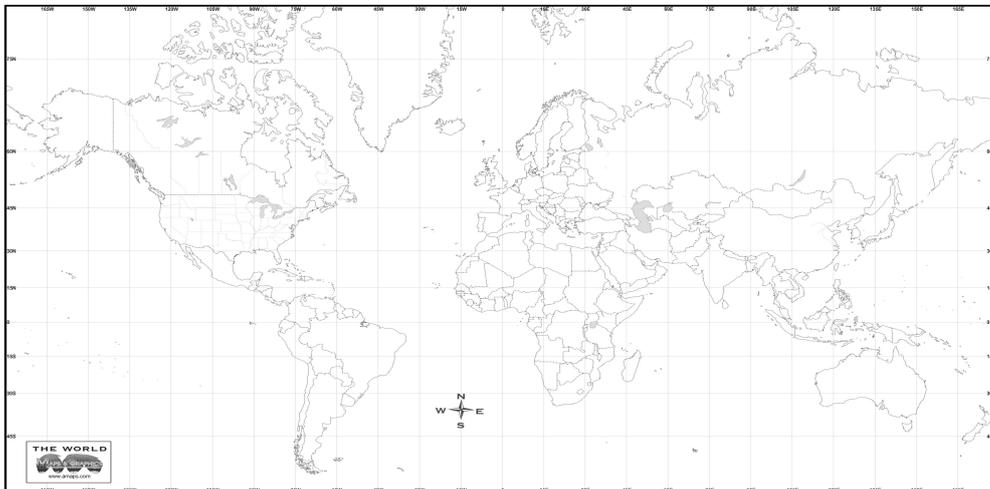
5. Shade the diagram to represent which part of the world is having day/night.

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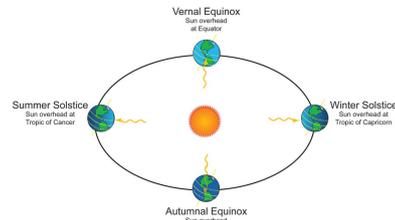
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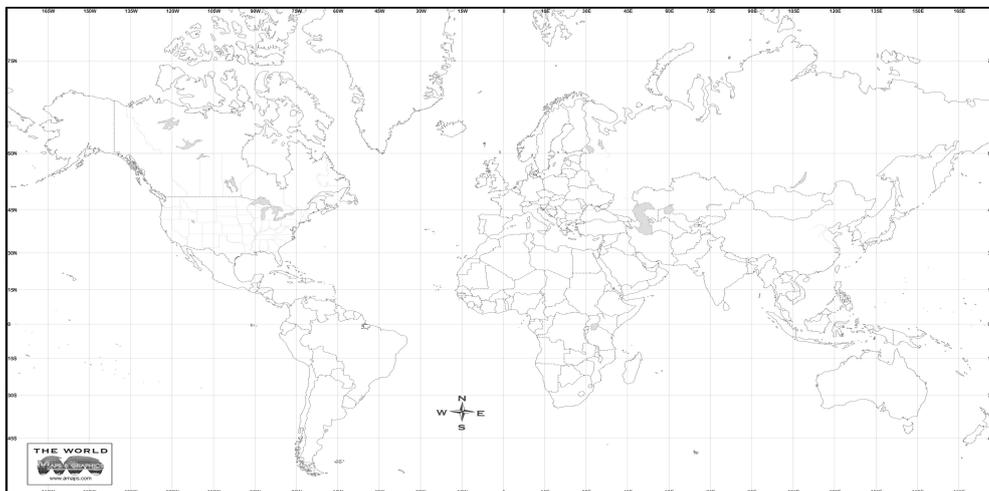
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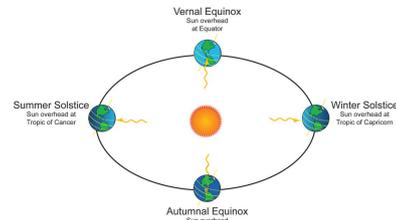
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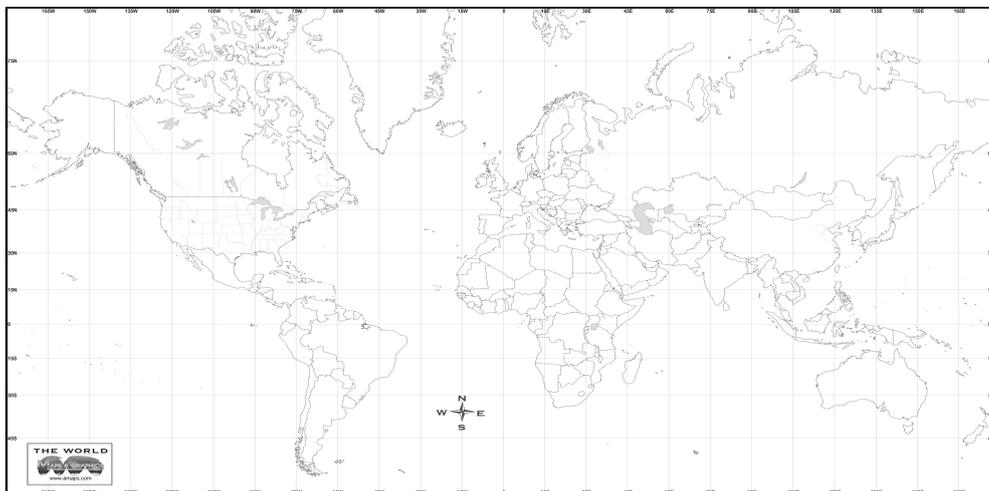
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See if you can answer the following questions (ask Google if unsure).

Does the equinox and solstice fall on the same day every year?_____

Explain why:

Do these events occur simultaneously in all parts of the globe?_____

Explain why:

Are there any differences or similarities between the diagrams you have recorded for these events? Think about the position of the sun, length of day/night.

Explain:

If sunrise is in Melbourne at 7.21 am

a) what time will it be in Melbourne when the sun is rising in Perth (there is a 2 hour time difference between Melbourne and Perth) Explain why:

b) what time would it be in Melbourne when the sun is rising in Auckland, NZ (there is also a 2 hour difference between Auckland and Melbourne) Explain why:

Bonus question (optional): this is a tough one, you might need a map of the world or a globe to figure this out.

My friend Ilke lives in Germany, I need to Skype with her during daytime at 10am.

Note:

- there is 1 hour time difference between Germany and GMT – Greenwich mean time in London, England – this is the place from which all time zones are measured.
- There is 10 hours difference between Melbourne and GMT

What time here in Melbourne would I have to call? Can you draw your reasoning?

Would the time I have to call change depending on season? If so, can you explain why?