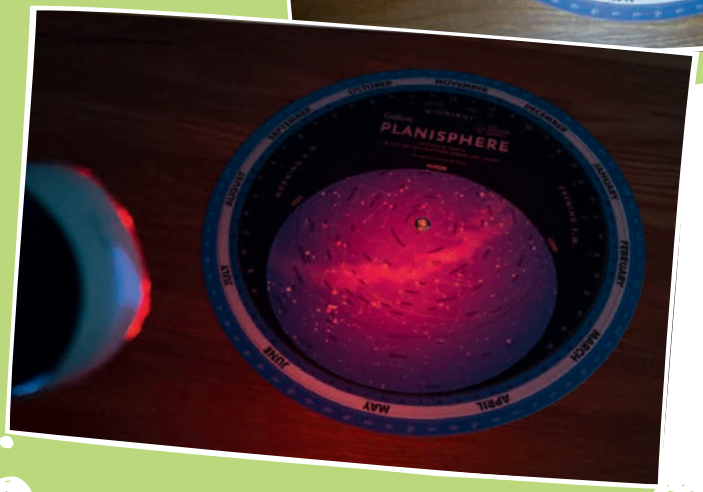
AN ASTRONOMICAL TORCH

Being outside in the dark is great for exploring the night sky, but it should always be done safely. Unfortunately, a standard torch spoils your ability to see well in the dark. Luckily, there is a way to safely see what you're doing and also avoid ruining your dark-adapted vision at the same time – use red light!





Red light doesn't spoil your ability to see in the dark, and you can use it to see where you're going and to make sure you don't bump into anything outdoors at night.

MAKE A RED LIGHT FILTER

You'll need:

- card
- red see-through sweet wrapper
- sticky tape
- stapler
- scissors
- a torch



What to do

1. Cut out a strip of card 2.5 cm wide and wrap it around the end of your torch.
2. Tape the card so it becomes a cylinder and take it off your torch.



3. Stretch your sweet wrapper across the top of the cylinder and tuck it over the sides.
4. Pull it tight and use tape to stick it in place.



5. Cut a second identical piece of card and roll it around the cylinder, covering the edges of the wrapper.
6. Use the stapler to secure the two pieces of card together with the edges of the wrapper between them.
7. You now have a red light filter you can slide onto the end of your torch when you want to use it for stargazing. Take this book outside and try reading it with your red torch light. The colours will be harder to see, but you can still make sketches and read the words.



TIP!

Secure the filter to your torch with a piece of sticky tape if it is too loose.

CONSTELLATIONS

Constellations are patterns of stars in the night sky. Many have very old stories attached to them, passed down for hundreds or thousands of years. Every star in the sky belongs to a constellation and there are 88 patterns in total. You can't see all of them from one place, or on one night because different patterns are seen on each side of the equator and in different seasons. Here are some famous constellations in the northern hemisphere.



When to see it	Constellation name	Character
Spring	Leo	Lion
Summer	Cygnus	Swan
Autumn	Cassiopeia	Queen
Winter	Orion	Hunter

FIND AND DRAW A CONSTELLATION

What to do

1. Find a constellation in the sky. See if you can spot the pattern yourself or use Stellarium to help you if you can't find it.
2. Draw what you see! Start with the brightest stars and add as many fainter stars as you can.
3. Make larger dots for brighter stars and smaller dots for fainter stars.

Draw your constellation here.

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From the author:

Hello – thanks for reading my book! I'm an astronomer, astrophotographer, author and science communicator, based in London. I've always loved exploring the sky with or without telescopes from different places all over the world, and I hope this book inspires you to look up at the wonders of the Universe. Who knows what you will discover?

If you want to find out more about space and tune into my podcast, visit my website at **stargazing.london**

I wish you clear and starry skies!



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