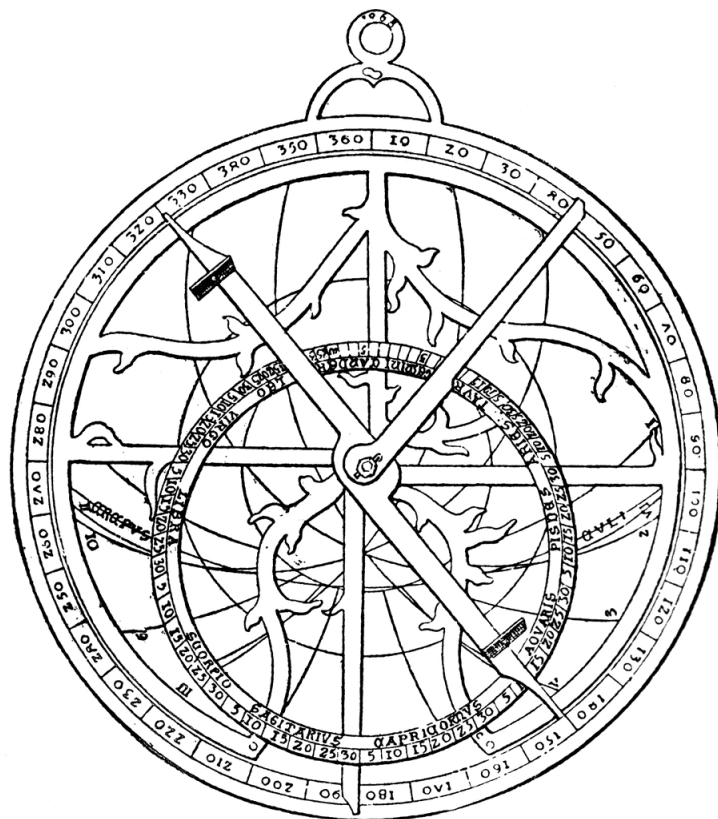


Let's Investigate

Stars & The Sky



Hi! I hope you enjoy exploring math with us this year. I created these pages for my children and I am happy to share them with you, so your family can enjoy them also. I have tried to include a variety of activities that can be used with children of all ages. Just print off the activities that you think will suit your children. Most of the activities are investigative, so you won't need an answer book. If you get stuck please email me and I will be happy to help. If the activities are research based questions I will provide links to help with finding the answers. I have also included a list of books, or web pages, you might enjoy to explore while looking at the topic. I hope you enjoy these investigations!

Created by Jo Buijs

Instagram

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[Jo_mathinnature](#)

Please print these pages freely within your home. If you would like to share this resource, please link back to naturestudyaustralia.com.au. Thank you!

Any pictures are either my own work or have been sourced at

Clip Art ETC <https://etc.usf.edu/clipart/> (Images have been used according to the free classroom use license.)

Or

Wikimedia Commons https://commons.wikimedia.org/wiki/Main_Page

Front cover picture:

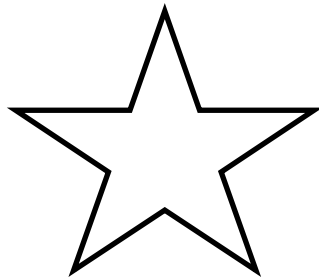
Regiomontanus' Astrolabe: A historical astronomical instrument used to predict positions of the Sun, Moon, planets and stars.

Investigating Stars

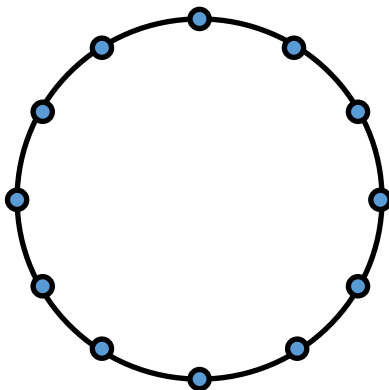
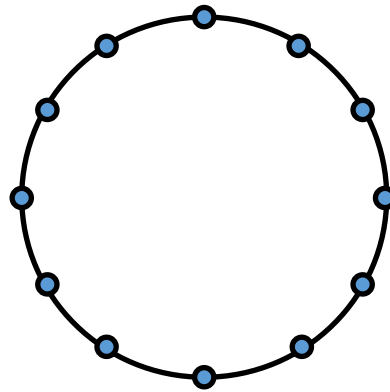
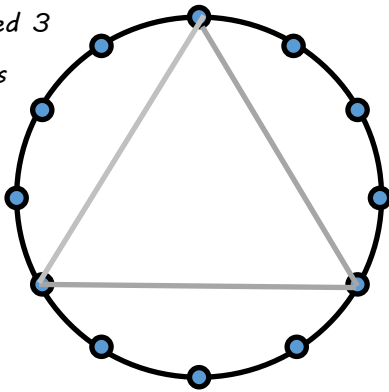
Have you ever wondered why we draw stars as a pointed, closed polygons when actually stars are giant spherical balls of plasma and gas?

Look at a light and squint your eyes. What happens to the light? Does it go all pointy? The same thing is happening when we see the stars in the sky. The light is being distorted by suture lines in our eyes, they 'bend' the light and we see a pointy star.

Have some fun drawing stars inside circles using the guides on the next page.



In this circle I
skipped 3
points



Start at one point. Draw a line to another point. How many points did you miss? Draw another line starting at your end point and missing the same amount of points. Keep going around. Try with a number of different spaces. Create some circles with different amounts of dots. What do you notice?

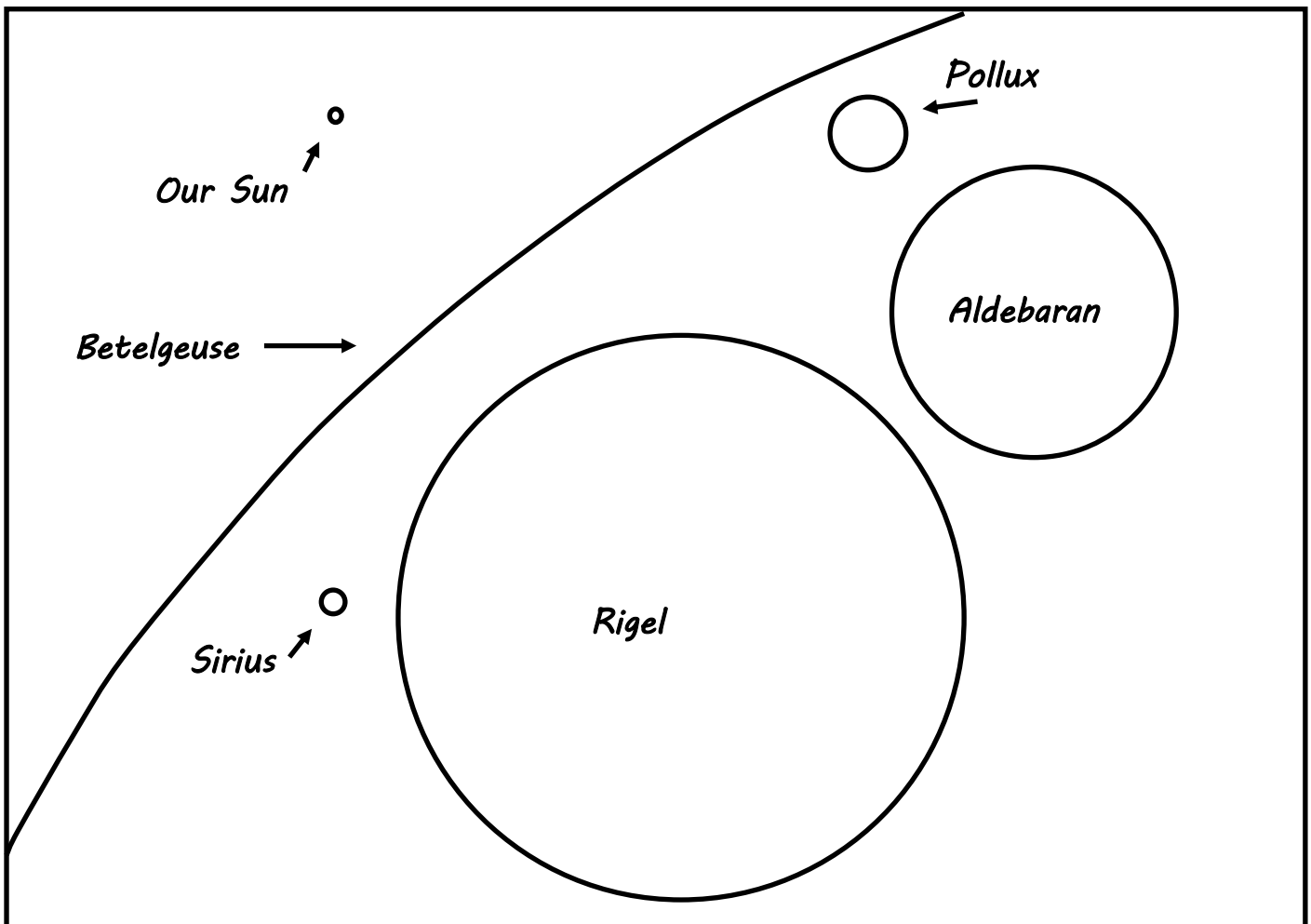
How Big is a Star?

It is hard to comprehend just how big a star is.

Our sun is so big that it can fit about 1,300,000 planet Earths inside of it. Even though that is big there are stars even bigger!

Research the size and type of star:

	Size compared to our Sun	Type of Star
Pollox		
Betelgeuse		
Rigel		
Sirius		
Aldebaran		



Colour this page comparing the relative size of some stars.

Star Maps

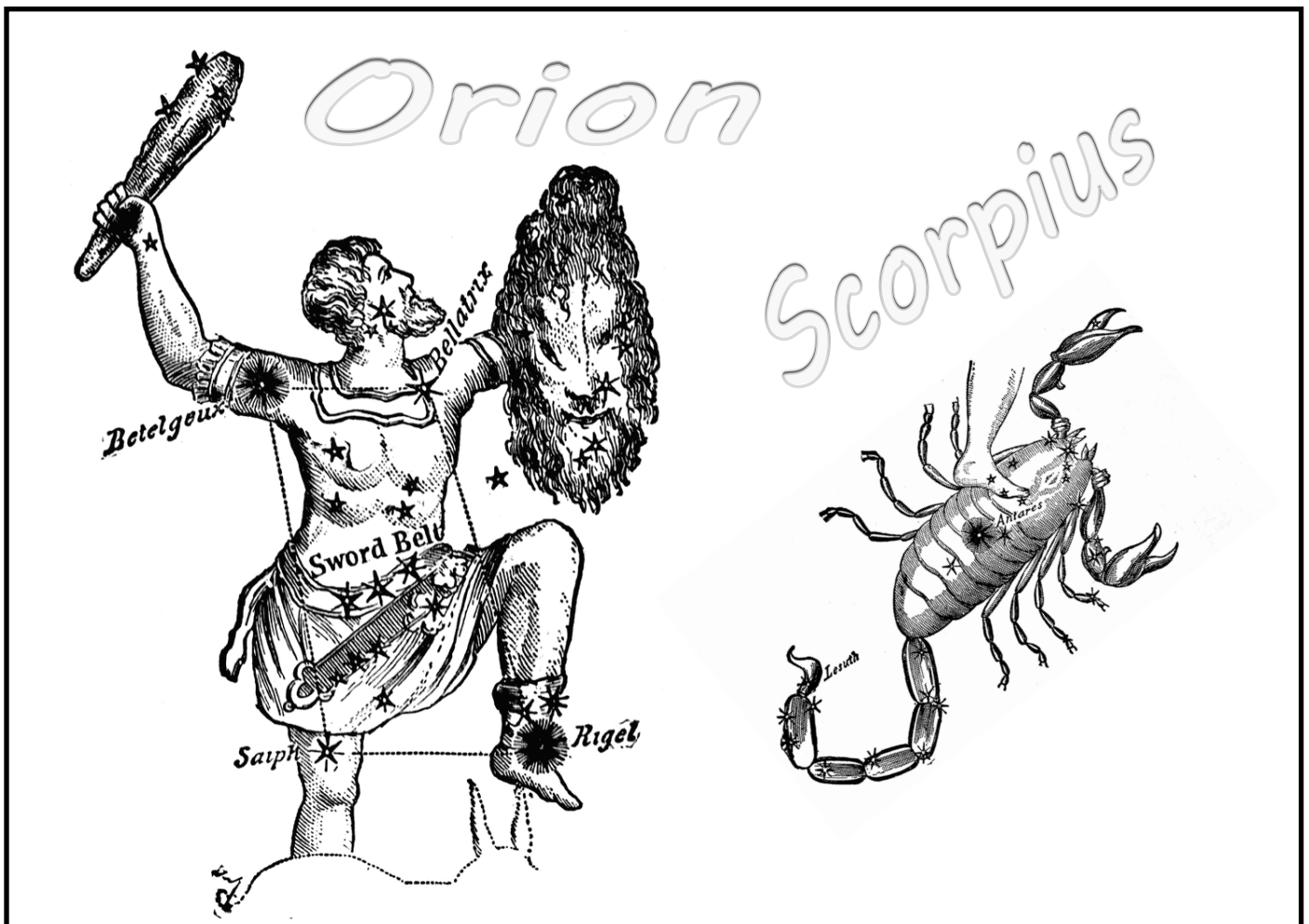
Do you enjoy looking at the night sky? Download the latest sky map at

<https://www.skymaps.com/downloads.html>

They have both southern and northern hemisphere maps for you to download and print.

Look at the map. What do you notice? What do you wonder? Can you recognise any of the constellations? What planets are visible this month, where you live?

Go outside tonight and look at the stars!



Constellation of the Southern Sky

Andromeda

Aquarius

Canis Major

Capricornus

Centaurus

Eridanus

Gemini

Orion

Pegasus

Pisces

Southern Cross

Taurus

Here is a list of some of the constellations that are visible in the southern hemisphere in Spring and Summer.

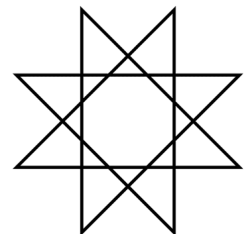
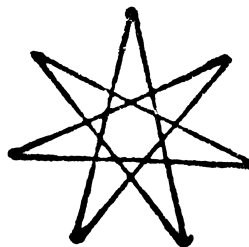
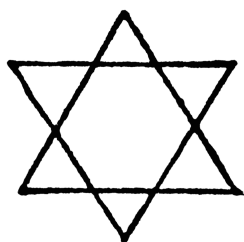
Create your own visual cards by researching the star combination that make the constellation and then use the templates to draw in a representation of the constellation. Alternatively, you can use black cardboard and poke holes where all the stars belong, draw connecting lines with a white paint pen.

Star Geometry

Use the star geometry cards to investigate angles, lines and shapes.

Use these questions to help you:

How many points does the star have? What angles can you find? Can you find any triangles? Is there any relationship between the number of points and the angles? What else do you notice or wonder about?



Advanced Math Activities

Research: Do a research project on the indigenous star maps.

Research: Create a poster showing the different kinds of stars and their relative sizes.

Create: A star tessellation with <https://www.whatdowedoallday.com/star-tessellation/>

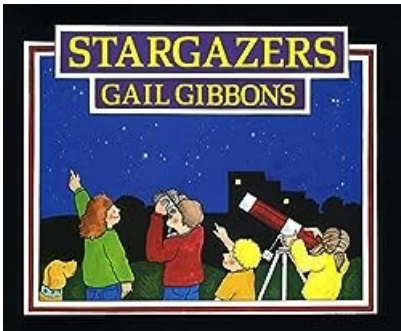
Watch: This [YouTube video](#) all about geometry and stars.

Extension Work

Have fun with a spirograph set, creating stars, spirals and patterns.

If you don't own a set try downloading a spirograph app to your tablet!

Books, videos and links that you might find helpful...



[Stargazers](#)

by Gail Gibbons

Video Links

[Universe Size](#)

[Constellations for kids](#)

[Drawing stars](#)

Link

[Spirograph app](#)

Draw the constellations to make your own visual cards.

<i>Andromeda</i>	<i>Aquarius</i>

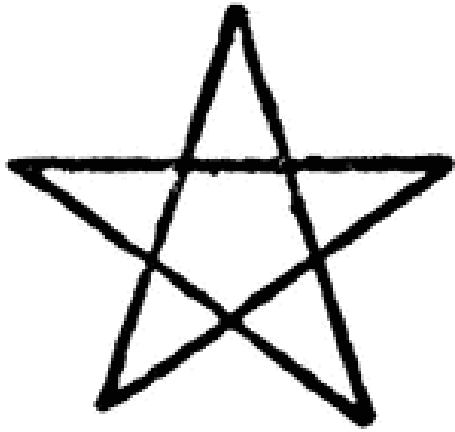
<i>Canis Major</i>	<i>Capricornus</i>

<i>Centaurus</i>	<i>Eridanus</i>

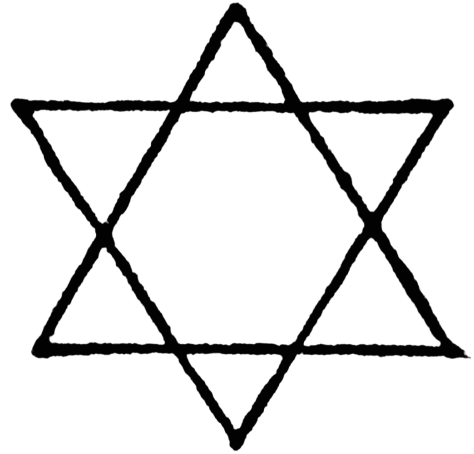
<i>Gemini</i>	<i>Orion</i>

<i>Pegasus</i>	<i>Pisces</i>

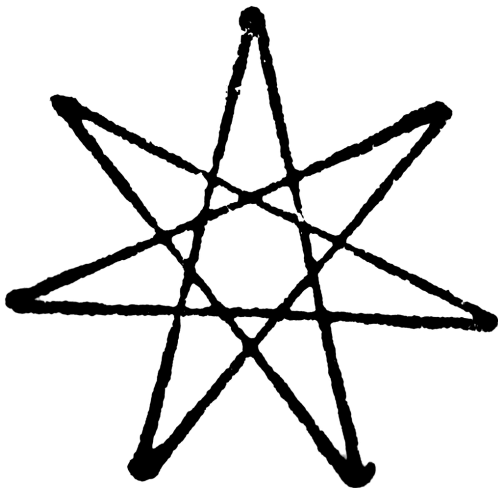
<i>Southern Cross</i>	<i>Taurus</i>



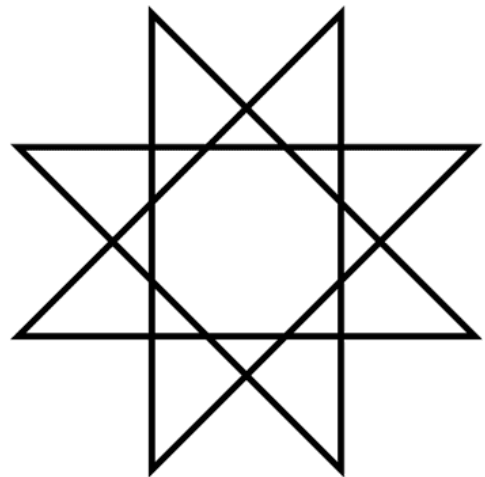
Pentagram Star



Hexagram Star



Heptagram Star



Octogram Star