

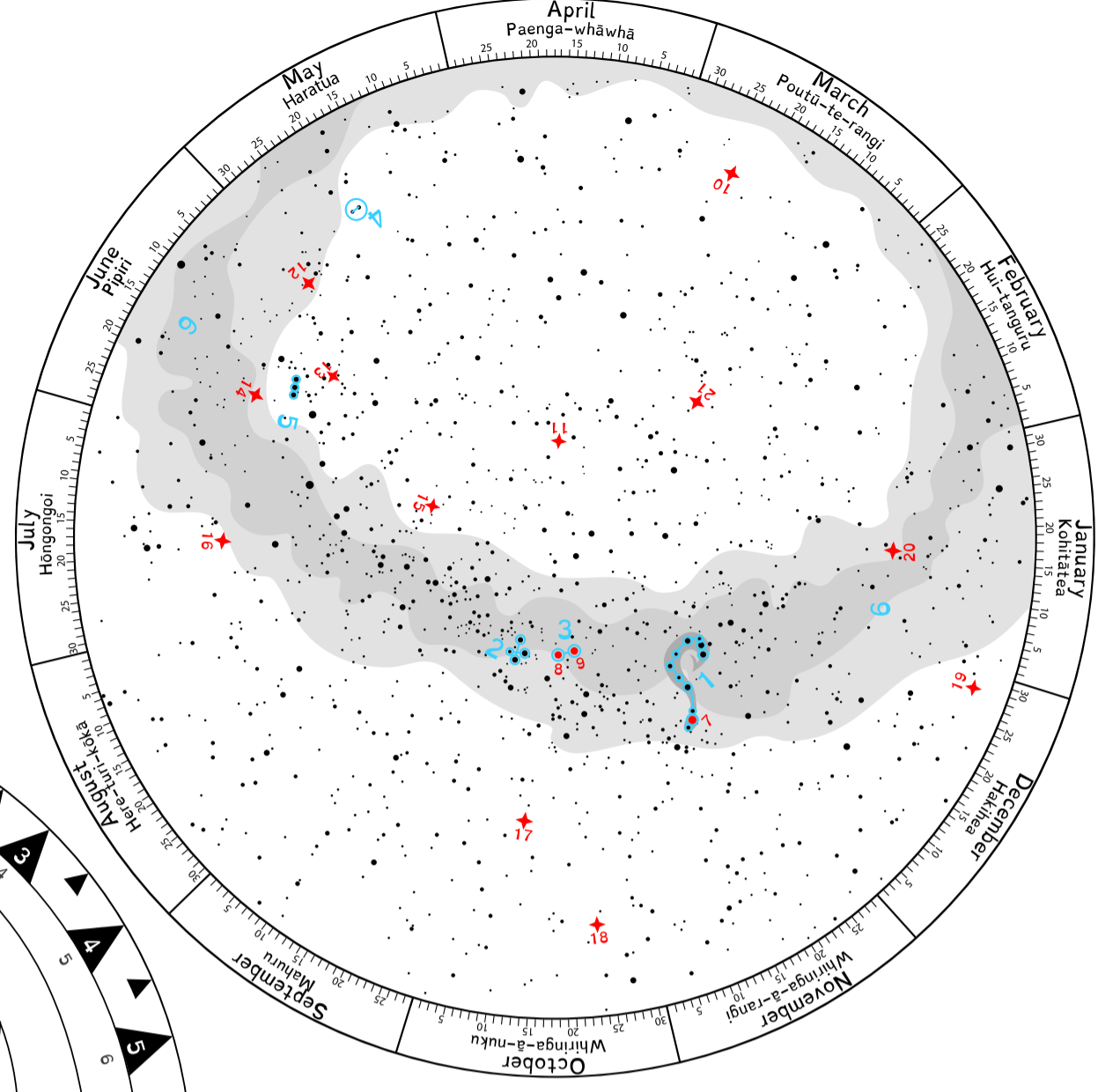
**Māhere Arotangi**  
Planisphere

**Tuia Mātauranga**

**Whakamārama Whakaahua Key**

Ngā Kāhui Whetū	Constellations
1 - Te Matau a Māui	Scorpius
2 - Māhutonga	The Southern Cross
3 - Te Taurā o te Waka	The Pointers
4 - Matariki	The Pleiades
5 - Tautoru	Orion's Belt
6 - Ikaroa/Mangaroa	Milky Way

Whetū	Stars
7 - Rehua	Antares
8 - Ranginui	Hadar
9 - Uruao	Alpha Centauri
10 - Ruawheke Motumotu	Alpheratz
11 - Marere o Tonga	Achernar
12 - Taumata Kuku	Aldebaran
13 - Puanga	Rigel
14 - Putara	Betelgeuse
15 - Autahi/Atutahi	Canopus
16 - Puanga-hori	Procyon
17 - Māriao	Virgo
18 - Ruawahia	Arcturus
19 - Whānui	Vega
20 - Poututerangi	Altair
21 - Otamarakau	Fomalhaut



**Me pēhea te hanga i tō mahererangi**

Ko tēnei mea te mahererangi he mahere o tō tātou rangi ina tirohia i te pō.  
Ko tāna he whakaatu ki a koe he pēhea ngā whetū me ngā kāhui whetū (ngā rōpū whetū) e nuku haere ai i te rangi i roto i te tau kotahi.

**Me pēhea te hanga i tō mahererangi**

- 1 - Pokaina te mahererangi huri noa, ki te kutikuti. Pokaina hoki ngā kōwhao porohita-titaha.
- 2 - Tapahia te mahere whetū huri noa.
- 3 - Kōpakina te mahererangi kia haurua te rahi, hei mahi pūkororo.
- 4 - Hoatu te mahere rangi ki te pūkororo.

**Make your own Planisphere**

This planisphere is a map of our night sky. It shows you how stars and constellations (star groups) move across the sky in a year

**How to make your Planisphere**

- 1 - With scissors, cut round the planisphere. Cut out the oval holes too.
- 2 - Cut round the star map.
- 3 - Fold the planisphere in half to make a pocket.
- 4 - Put the star map in the pocket.

**How to use your planisphere**

- 1 - Check the time, and look for the corresponding time is it a clear night? Then you're ready to go!
- 2 - What's the date? Turn the wheel so tonight's date is at the time you are observing. Now the planisphere is showing the stars and constellations you can see in the sky tonight.
- 3 - Find out which direction is south - use the Southern Cross and Pointers, or check with a compass.
- 4 - Stand facing south. Hold your planisphere so "south" is facing towards you.
- 5 - Lift the planisphere above your head. The star map will match the night sky.
- 6 - If you turn to face north, flip the planisphere so north is facing towards you and you will see the stars in the northern sky.

Which stars can you find?

- 1 - Ata tiroiro ki te haora, rapua te wā hangai, i te wira.
- 2 - He aha te rā o te tau (date)? Hurhia te wira kia noho te rā o te tau ki te wā e tiroiro whetū ana koe, ināianei.
- 3 - Kua puta ngā whetū me ngā kāhui whetū ka taea e koe te kite i te rangi i tēnei pō, ki te mahererangi. Ata tiroiro kei hea te ahunga o te tonga - whakama-hia Te-Taki-o-Autahi me Te Taurā o te Waka o Tamareretī, tirohia rānei ki tētahi kāpehu.
- 4 - E tu me te anga whaka-te-tonga. Puritia tō mahererangi kia anga mai te "tonga" ki a koe.
- 5 - Hitikina te mahererangi ki runga ake i tō māhunga. Ka taurite te mahererangi ki te rangi i te pō.
- 6 - Ki te anga whaka-te-raki koe, hurhia te mahererangi kia anga ke mai te raki ki a koe, ā, ka kite koe i ngā whetū i te rangi ki te raki.

Ko ehea ngā whetū kua kitea e koe?

**Ngā hipanga mō te whakamahi i te mahererangi**

Me pēhea te whakamahi i tō mahererangi? He pō marama (kore-kapua) tēnei? Kua haere koe ki te tiroiro whetū!