

Te Paepae o Aotea Science Badge

ASTRONOMY			
Complete 20 stars			
Rating	No	Activities	Sign
***	1	Use the projection method to observe the sun with small telescope. Make sketches (daily if possible) for a fortnight, showing the positions of sunspots. Work out how long it takes the sun to turn once on its axis.	
*	2	Design and construct a simple apparatus to demonstrate the difference between a solar and lunar eclipse.	
*	3	Write a report for your school newspaper or magazine about a recent or coming astronomical event.	
**	4	Starting two days after a new moon, and continuing until full moon, make sketches of the phases of moon. Try to observe at least every second day.	
*	5	Each day for two weeks record from newspaper the times of sunset and moonset. Explain the changes you observe.	
*	6	Visit a planetarium and write a report for you school newspaper or magazine or talk to your class about it.	
*	7	Visit an observatory one evening and write a report for your school newspaper or magazine or talk to your class about it.	
*	8	Draw diagrams showing the difference between reflecting and refracting telescopes.	
*	9	Sketch and name the constellations that contain the stars Alpha Centauri, Achernar and Fomalhaut. Label the 4 stars.	
**	10	Name each of the 9 known planets in the solar system, and describe the main difference between planets and stars.	
**	11	Write an explanation of what gives stars their colours. Pick and names three stars of different colours and how hot each one is.	
*	12	Write short notes on the following: solar	

		system, constellations, star clusters, galaxies and the universe.	
***	13	Make a photograph of star trails.	
*	14	Find out about a famous astronomer, perhaps Galileo, Newton, Copernicus or Kepler. Write a brief account of the person's life.	
**	15	Make a poster showing the mission or one of the planetary space probes eg Voyager.	
*	16	Describe, using a poster or a chart, the life circle of stars like the sun.	
*	17	Write about black holes.	
*	18	Write about planetary nebulae, novae and supernovae.	
*	19	Write an explanation of how you can find south by using the stars.	
***	20	Make a scale model of solar system.	
***	21	Using a shadow stick record the length of its shadow every hour over one day. Write a report on what you observe.	
*	22	Write a fiction or non-fiction story about living in space station.	
*	23	Make a poster which explains the difference between comets, meteors, asteroids and meteorites.	
*	24	Write a short story about living on one of the other planets in the solar system.	
***	25	Record the position where the sun sets on the horizon over a period of one month. Mark the position on map of you horizon.	
*	26	Explain why the sun appears to be moving across the sky.	
*	27	Make a wall chart to show why some stars are brighter than others.	
**	28	Make drawings of 3 different types of galaxies with an explanation of what each one is.	
**	29	Some stars vary their brightness. Find out what they are and write a paragraph about them.	
***	30	Construct a simple astronomical telescope and	

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		measure its magnification.	
***	31	Using a ruler and two pieces of card, measure the sun's diameter. Write a report (do not look directly at the sun as it may damage your eyes).	
*	32	Write down the meanings of light-year, astronomical unit, escape velocity.	