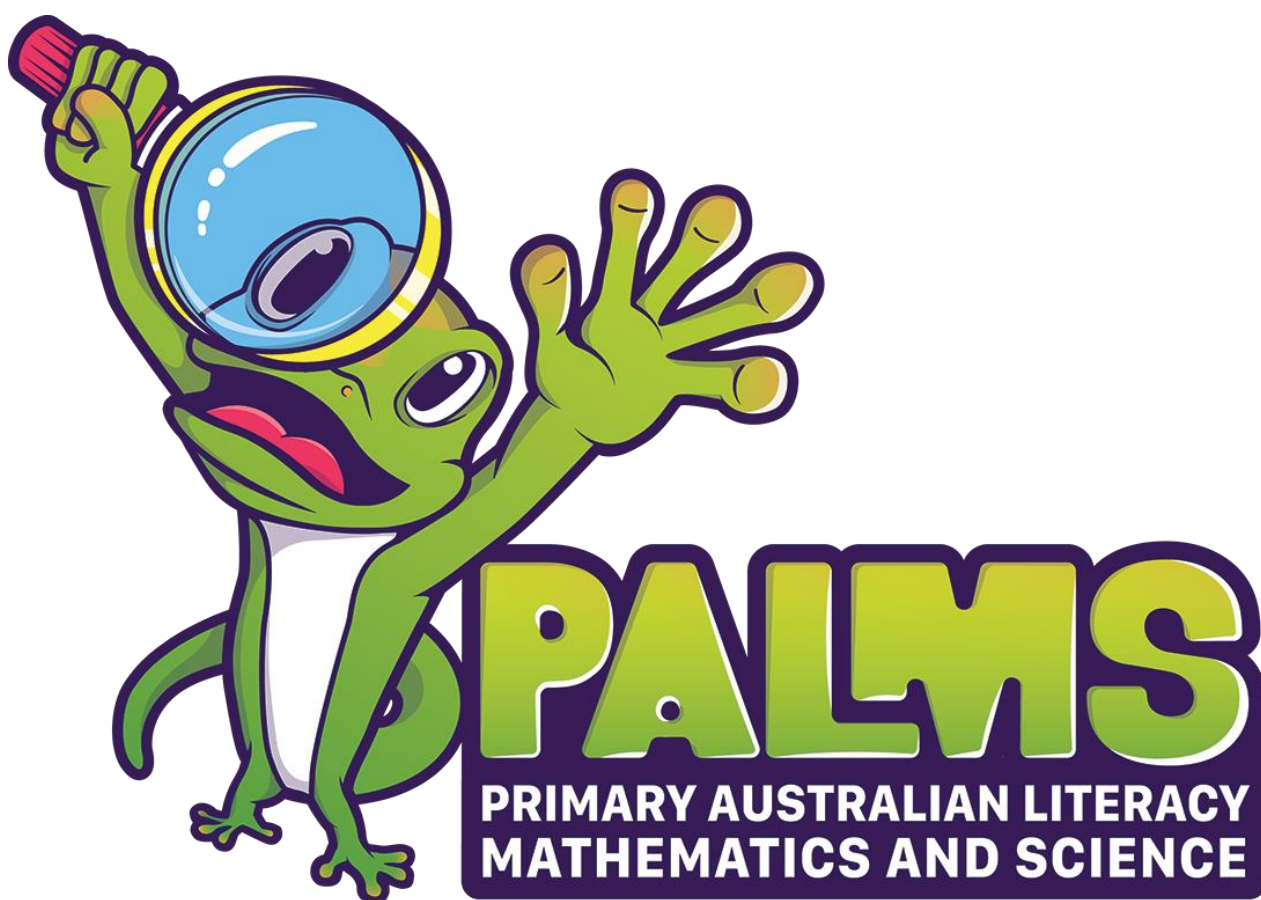


YEAR 3 STEM Projects

Science Technology Engineering and Mathematics
(STEM) Projects - Student Booklet



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STEM Project - Student Booklet

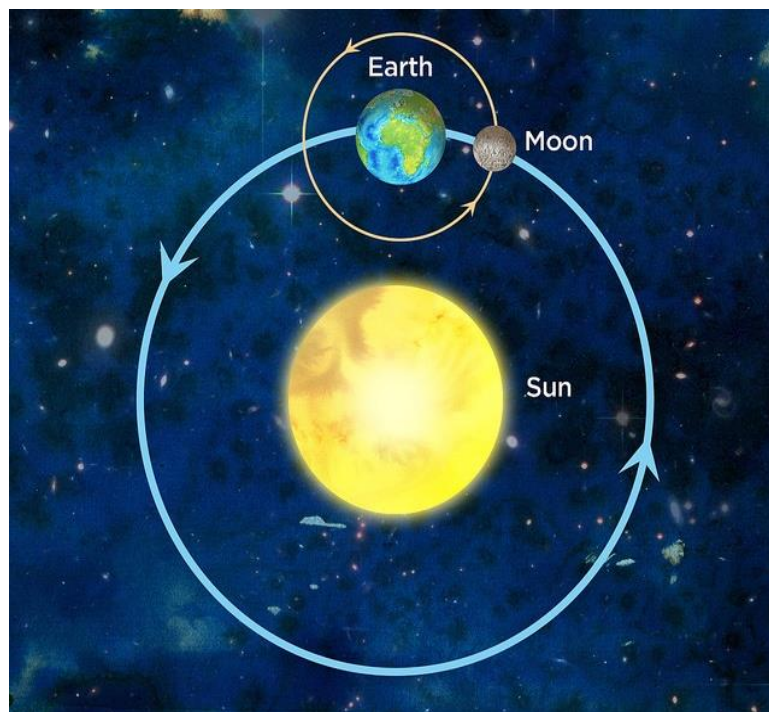
Make My Day (& Night)

Introduction

In this booklet, you can record all the information you find out about the Sun, Earth and Moon and how their movements affect us!

Contents

1. *Shadow Tracking*
2. *Moon Diary*
3. *Cultural Stories*
4. *Scale Models*
5. *Design a Garden project*



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Shadow Tracking

Draw a picture in the space below of what it looked like when you traced around a shadow at different times during the school day. Label the diagram.





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Results and discussion questions

Record the length of the shadow in the table below

Time	Length of shadow (cm)

What did you do to make sure this was a fair test?

How did the length of the shadow change throughout the day?

What did the shadow look like in the middle of the day?





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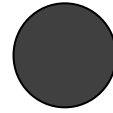
Moon Phases Diary

Look at the Moon every night and colour in the circle to show the shape of the Moon you can see each night. For example, you might see all of the Moon

like this:



or just a little of the Moon like this:



1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28		



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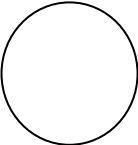
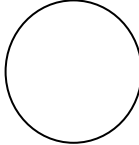
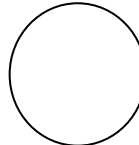
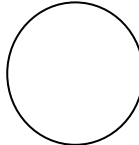
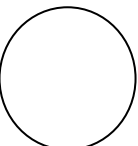
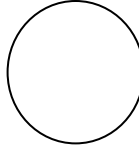
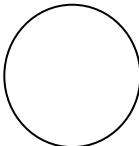
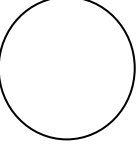
Results and discussion questions

How did the shape of the Moon change over time?

Could you see more or less of the Moon on Day 1 compared to Day 14?

Could you see more or less of the Moon on Day 1 compared to Day 28?

Fill in the circles in the boxes below to show the different phases of the Moon.

New Moon 	Waxing crescent 	First quarter 	Waxing gibbous 
Full Moon 	Waning gibbous 	Last quarter 	Waning crescent 

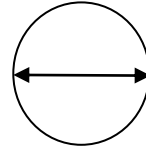


STEM Project - Student Booklet

Scale Models

Fill in the table below with the real sizes of the Sun, Earth and Moon and the sizes of your scale model.

(The diameter is the distance across the middle of a circle)



	Diameter (km)	Diameter (cm)
Sun		
Earth		
Moon		

Were you able to make a complete model of the Sun? Why?

Draw a picture of your models here:

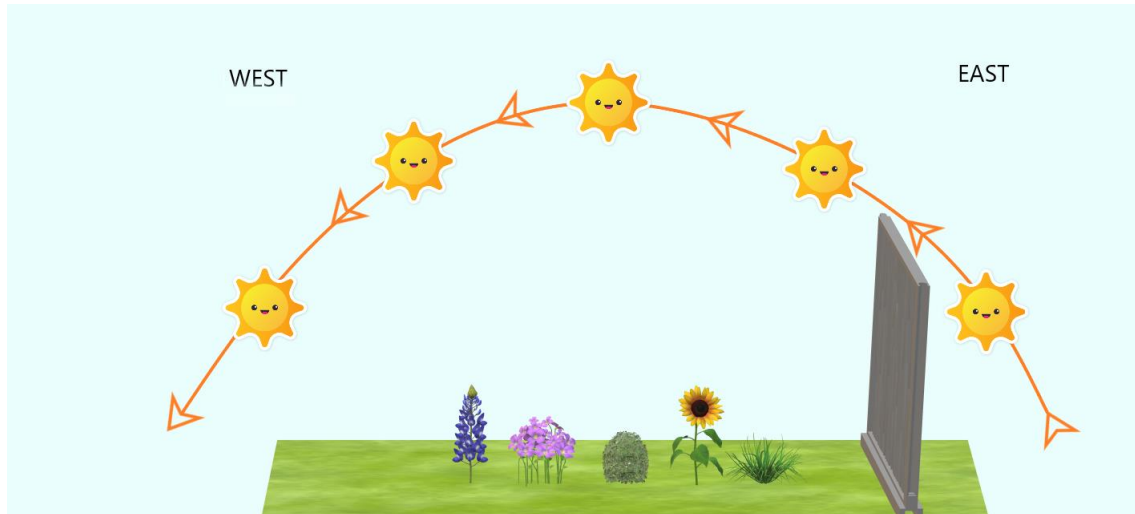




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Design a Garden

We have learned that as the Earth rotates, we see the Sun moving across the sky.



Some plants need more sunlight than others to grow.

Imagine you have been asked to design a garden and decide which is the best place to put plants, so they get the perfect amount of sunlight.

First you need to find out how much sunlight different plants need. Your teacher will show you some plant tags that have information about this. Record your information in the table below by colouring in the Sun symbol or writing what the label tells you.









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Design a Garden - Plant Research



Name of plant	This plant grows best in:
	
	
	
	



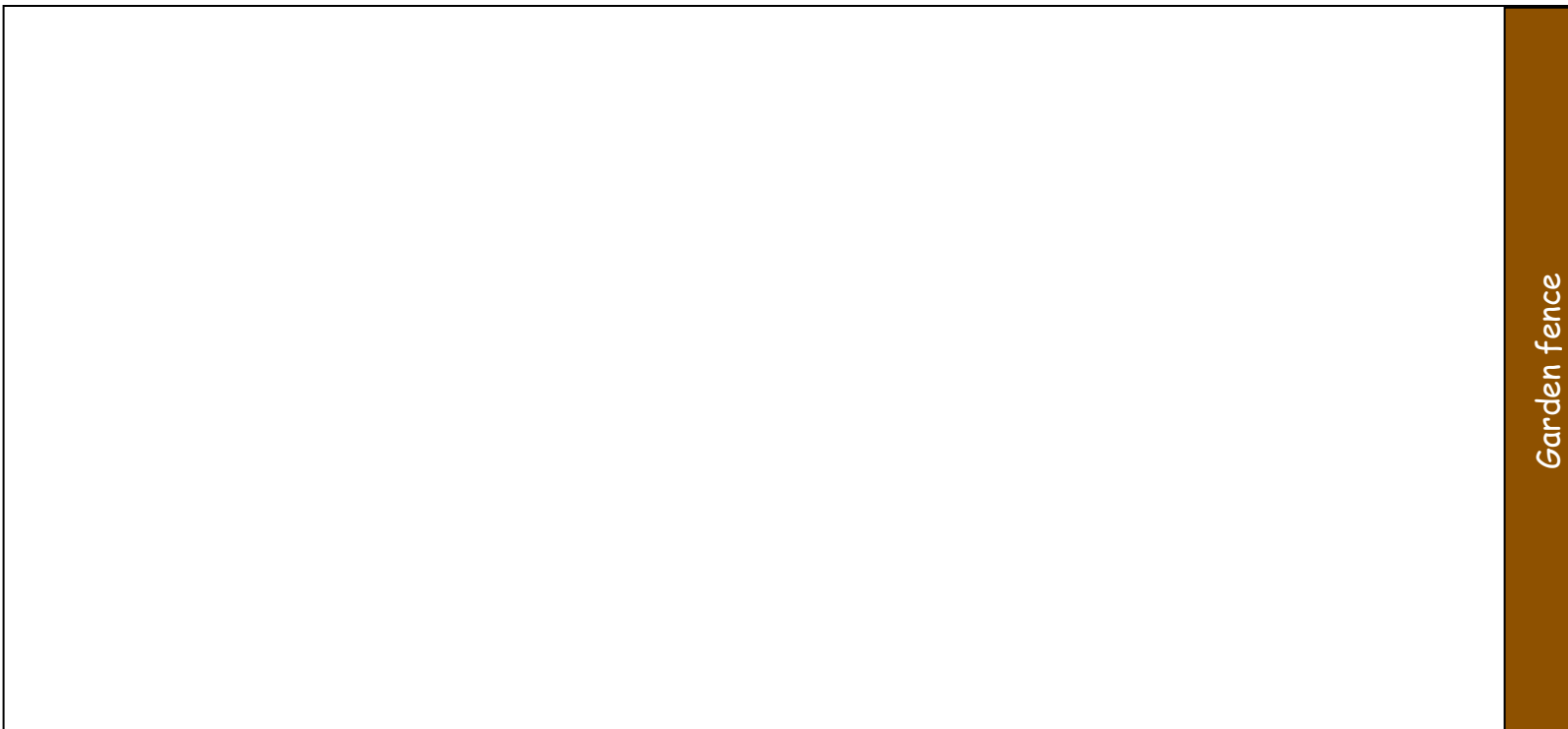


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Design a Garden - Garden Plan

Choose some plants and decide where they should go in the garden. Add a plan of where you will put your plants on the diagram below.

- * Remember that the garden fence will cast a shadow across the garden beds, so some plants won't get sunlight for as long as others.





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Results and discussion questions (Model Option)

Which plants got the most sunlight when you tested your model? Was this what you expected from your design?

Do you think the shadow from the garden fence would be in the same place if you moved the fence to another side of the garden? Try it and test your model again if you can! Draw a diagram to show where the shadow falls now.

Tell everyone about what you found out!

Your teacher will let you know how you are going to tell everyone what you found out about how much sunlight plants need and planning a garden.



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Results and discussion questions (Garden Planting Option)

Which plants got the most sunlight when you planted your garden? Was this what you expected from your design?

Do you think the shadow from the garden fence would be in the same place if you moved the fence to another side of the garden? If you can, move the fence and observe the fence shadow again! Draw a diagram below to show where the shadow falls on the garden now.

Tell everyone about what you found out!

Your teacher will let you know how you are going to tell everyone what you found out about how much sunlight plants need and planning a garden.



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