

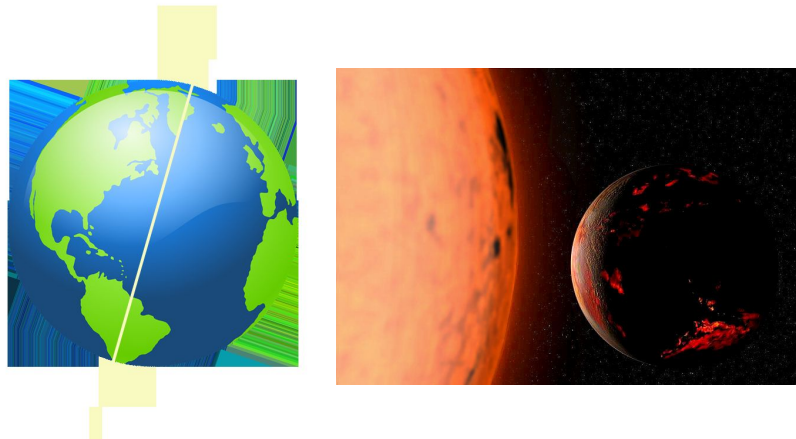
Lesson 4.3 - Night and Day

Student Workbook Component

Warm Up – The Earth Spins

How do people around the world experience Day and Night?

The Earth spins. It makes one revolution every day. Sunlight illuminates the Earth constantly but at any time, half the Earth is dark and the other is receiving light from the Sun. Where it is light, people of the Earth experience day, and where it is dark, night



Try this: Look at a window. Imagine that the window is the Sun and you are the Earth. Now spin around slowly on the spot, after a half-spin you can't see the window anymore, it is night for you! Keep turning, and now you can see the windows again. It's day again!

Mini-lesson - The Sun's (apparent) movement

Where is the Sun during the day?

Use this page and complete the sentences using your globe and a world map:

The middle of the South Pacific	Madrid, Spain
Australia	Botswana, Africa

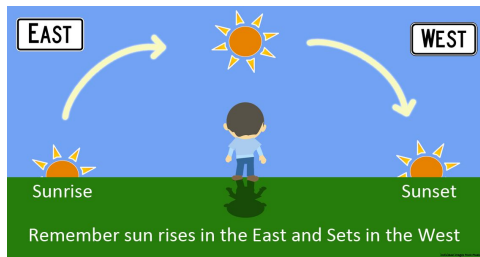
1. When it's day in Wellington, New Zealand, it's night in _____

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2. When it's night in NYC, it's day in _____
3. When it's day in Hawaii, it's night in _____
4. When it's Greece, it's day in _____

Where is the Sun during the day?



If it is a sunny day go out and stand facing South with East on your left and West on your right. Work out position of shadow and time it represents. At noon will be straight in front of you.

A sundial works like this

This [SunTracker. page](#) lets you work out the Sun's path across the sky on a particular day in a particular place by setting the date and choosing your location.



Mini-lesson:

Learning Check

In the space write definitions of these words

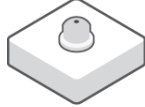


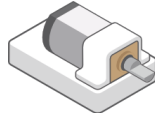




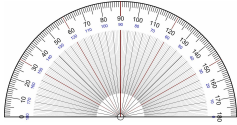
Axis	
Tilt	
Sun	
Earth	
Day	
Night	

Challenge 1

Planning Your System

Learning Objective: *Design a system which makes the Earth revolve*

You will need:

 <i>Light Block</i>	 <i>Key Press</i>	 <i>Toggle</i>
 <i>Motor</i>	 <i>Wheel</i>	 <i>Dowel or Skewer</i>
 <i>Chassis</i>	 <i>Styrofoam Ball</i>	 <i>Protractor</i>

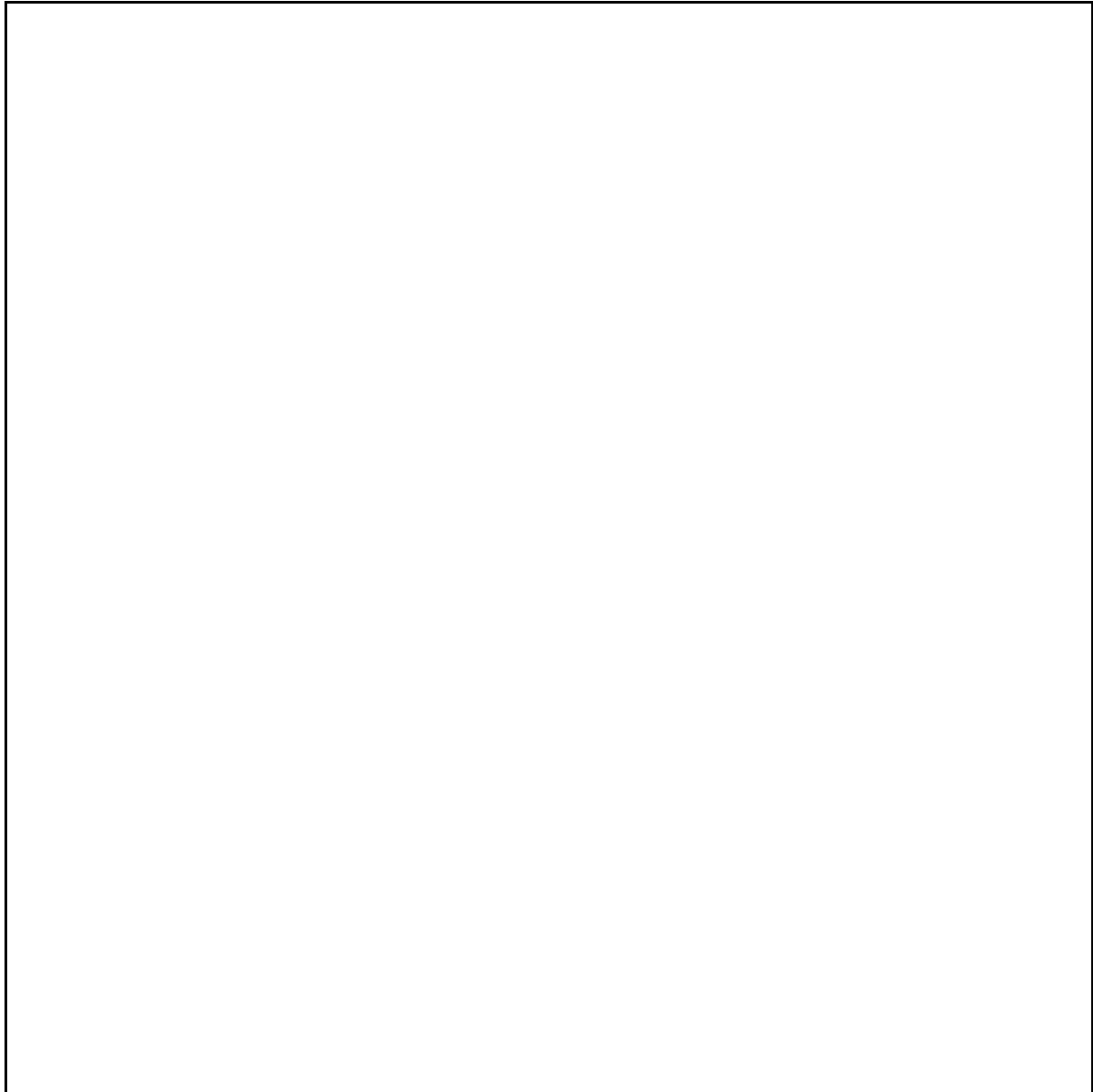
Your Plan: Think about the SAM system you need to create and use the space below to plan your system:

Remember these key points:

- Which are your inputs and outputs? *Remember inputs on the left connected to your output on the right*
- How will they be connected together?
- What settings do you need to edit?


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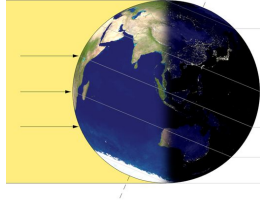

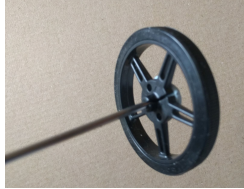

Look at the pictures. Then read the sentences that describe Challenge 1. What happens First? Second? Third? Write the number of the step below each picture.

Step 1 has been completed for you.

	<p>The Earth isn't completely upright. Incline it to about 23°</p>	
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	Now you can see that the South Pole never gets dark when you rotate the Earth	
	Stick the two wheels together	
	Mount a wheel on the dowel	
Step 1.	Mount the Earth on the dowel again	
	Mount another wheel on the Motor	