Subject	Ter	m	Unit		Int	ent		A A
Science- Year 5	Autu	nn 1	Space and Astronomy		Inte	erweaving knowledge	and	COLUMN TO UNIT
			,		aro	und us.	Volta	
Vocabulary								
Asteroid	A roc	A rock that orbits the Sun in a belt between Mars and Jupiter.						
Axis	An im	An imaginary line through the middle of something.						
Comet	A bright object with a long tail that				t tra	ivels around the	e Sun.	
Galaxy	An ex	An extremely large group of stars and planets. Our galaxy is called the Mil						
	ky Wa	ky Way.						
Gravity	The fo	orce wh	nich causes things t	to dr	op	to the ground.		
Leap year	A yea	r whic	ch has 366 days. T	he e	xtr	a day is the 29	th Feb	ruary. There i
	s a le	ap yea	r every four year.					
Meteorite	A roc	< from	outer space that ha	as la	nde	ed on Earth.		
Orbit	The cu	urved p	bath in space					
	that is	follow	ved by an object go	bing	aro	und a planet, m	oon o	or star.
What	?	To un	derstand the rela	tion	shij	os between the	e Eartl	h, Moon and
		<u>Sun. T</u>	o think about wh	at c	aus 	es day and nig	ht.	
wny:		The links to Year 6 work on time zones and the polar regions.						
How?	•	Throu	gh observations a	nd and		ondary researc	<u></u>	
110.001	Prior	know			JCC	National Cu	rricul	um
 observe 	e chang	zes aci	ross the four		• (lescribe the m	ovem	ent of the
seasons	5	,		Earth, and other planets, relative				
 observe and describe weather 			to the Sun in the solar system					
associat	ted wit	h the	seasons and	 describe the movement of the 				
how day length varies.				• (lescribe the m	ovem	ent of the	
	y lengt	h vari	es.		• (lescribe the m Moon relative t	ovem to the	ent of the Earth
	y lengt	h vari	es.		• (• (lescribe the m Moon relative t lescribe the Su	ovem to the in, Eai	ent of the Earth rth and
	y lengt	h vari	es.		• () 	lescribe the main Moon relative the Su Jescribe the Su Moon as appro	ovem to the in, Eai ximat	ent of the Earth rth and cely
	y lengt	h vari	es.		• () 	lescribe the ma Moon relative the Su Jescribe the Su Moon as appro Spherical bodie	ovem to the in, Eai ximat	ent of the Earth rth and cely
	y lengt	h vari	es.		• 0 1 • 0 • 0 • 1	lescribe the ma Moon relative to lescribe the Su Moon as appro pherical bodie use the idea of rotation to exp	ovem to the in, Eai ximat s the Ei lain d	ent of the Earth rth and cely arth's av and night
	y lengt	h vari	es.		• () • () • () • () • ()	lescribe the ma Moon relative to lescribe the Su Moon as appro pherical bodie use the idea of rotation to exp and the appare	ovem to the in, Eau ximat s the E lain da	ent of the Earth rth and cely arth's ay and night ovement of
	y lengt	h vari	es.		• 0 • 0 • 0 • 1 • 1 • 1	lescribe the main Moon relative the Suran Moon as appro pherical bodie use the idea of rotation to exprand the appare he sun across	ovem to the in, Eau ximat s the E lain da ent mo the sk	ent of the Earth rth and cely arth's ay and night ovement of cy.
	y lengt	h vari	es.		• (1 • (5 • (7 • (7 • (1 • (1 • (1)• (1)• (1)• (1)• (1)• (1)• (1)• (1)• (lescribe the m Moon relative t lescribe the Su Moon as appro pherical bodie use the idea of otation to exp and the appare he sun across dentifying scie	ovem to the in, Eau ximat s the Ea lain da ent mo the sk ntific	ent of the Earth rth and cely arth's ay and night ovement of cy. evidence
	y lengt	h vari	es.		• (1 • (1 • (1 • (1 • (1 • (1)• (1)• (1)• (1)• (1)• (1)• (1)• (1)• (lescribe the ma Moon relative to lescribe the Su Moon as appro pherical bodie use the idea of rotation to exp and the appare he sun across dentifying scie hat has been u	ovem to the in, Eau ximat the Ea lain da the sk ntific used to	ent of the Earth rth and cely arth's ay and night ovement of cy. evidence o support or
	y lengt	h vari	es.		• (1 • (1 • (1 • (1 • (1 • (1 • (1)• (1)• (1)• (1)• (1)• (1)• (1)• (1)• (lescribe the ma Moon relative to lescribe the Su Moon as appro pherical bodie use the idea of rotation to exp and the appare he sun across dentifying scie hat has been u refute ideas or	ovem to the in, Eau ximat the Ea lain da the sk ntific used to argur	ent of the Earth rth and cely arth's ay and night ovement of cy. evidence o support or ments

Planet	A large, round object in space that moves around a star.
Shadow	A dark shape on a surface
	that is made when something stands between a light and the surface.
Solar Syst	The Sun and all the planets that go around it.
em	
Sphere	An object that is round in shape, like a ball.
Spin	To turn quickly around a central point.
Star	A large ball of burning gas in space.
Time zone	One of the areas into which the world is divided, where the time is calcul
S	ated as being a particular number of hours behind or ahead of GMT (Gree
	nwich Mean Time).
Universe	The whole of space and
	all the stars, planets and other forms of matter and energy in it.

	Learning
Objective	Learning
	Identifying and Classifying
Can I explain a	A celestial body (sometimes called a celestial
celestial body?	or astronomical object) is any object that exists within
	the universe. This includes stars, planets and moons, as well
	as smaller objects
	such as comets, meteoroids and asteroids. All of these cele
	stial bodies can be found inside galaxies, such as the Milky
	Way, where our Solar System exists.
	Name the planets around the sun. Draw the construction of
	the solar System and discuss the word orbit.
	Comparative Testing
Can I identify	The geocentric model of the Solar
the difference	System was used from prehistoric
between the	times and supported by the church for hundreds of years.
geocentric and	It stated that the Earth was at the centre of the Solar Syste
heliocentric mod	m <i>,</i>
els of the Solar	with the Sun and other planets orbiting around it. The helio
System?	centric model, developed in the 16 th century, proved that
	the Sun was actually at the centre of the Solar System and
	that Earth and all of the other known planets

	orbited around it. This was a huge change in thinking and took nearly a century to be accepted by scientists and the church. Draw or use pictures of each of the models to describe what they mean and who though this in the past. How did ideas change? Why did ideas change?
	MARS MARS
Why was Nicola	Research
us Copernicus'	Nicolaus Copernicus (1473-
work so	1543) <u>https://www.youtube.com/watch?v=M0p6NKANE08</u>
controversial?	[Biography] <u>https://www.youtube.com/watch?v=s6efb-</u>
	Lz1N4 [Heliocentric Model] Polish mathematician, astronom
	er and church leader.What did he believe? Why was it so
	controversial at the time? How long did it take people to
	believe him? Why?
Can	Identifying and Classifying
I identify all the	The Moon orbits the Earth in an anti-clockwise direction
phases in the	and takes approximately 28 days, or one lunar month, per
cycle of the Moo	orbit. Because the Moon also spins on its axis as it
n?	orbits Earth, we only ever see one side of it. Depending on
	where it is in its orbit, the Moon is visible in
	8 different phases: a new moon is closest to the Sun and
	cannot be seen at all, whilst
	a full moon is furthest from the Sun and shows
	the Moon's full side. Use the moon phases experiment
	NASA - Moon Phases Demonstration to show how the
	phases of the moon change. Why do they change? Record
	the phases of the moon in books.
	Observing Over Time
Can I use	The Earth rotates on its axis in an anti-
a sundial to help	clockwise direction and makes one
me tell the tim	complete rotation in 24 hours, or one day. This makes it
e?	appear as though the Sun is moving through the sky,

	but in fact it is the Earth's rotation that causes day			
	and night As the Earth rotates shadows that are formed			
	change in size and orientation. What would the shadows rev			
	eal about the time of day?Measure the length of shadows			
	during a day. Record the diagram in books and explain what			
	we are observing.			
	The Shadow Stick			
	B			
	A C			
	Stick			
	C Shadows B A			
Can I explain	Comparative Testing/research			
why it is	Look at a globe and show how night and day occur using a			
davtime in some	torch Children to research time zones and to predict which			
adytime in some	countries will be in devlight while others have night time			
places and	countries will be in daylight while others have hight time.			
night-time in	Record findings.			
others?	12-11:10 9 7 6 5 4 3 2 1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 10 11 12 1 14 +5 +6 +7 +8 +9 10 11 12 1 14 +5 +6 +7 +8 +9 10 11 12 1 14 +5 +6 +7 +8 +9 10 11 12 14 +5 +6 +7 +8 +9 10 11 12 13 14 15 16 17 18 19 20 21 82 9 10 11 12 13 14 15 16 17 18 19 20 21 82 9 10 11 12 13 14 15 16 17 18 19 20 21 82 14 15 16 17 18 19 20 11 12 13 14 15 16 17			

Additional research

Why do some people consider	Pattern Seeking
Stonehenge to be an	Stonehenge was constructed in
astronomical clock?	prehistoric times on Salisbury Plain
	in Wiltshire. The whole site is built in such
	a way that it lines up with the sunrise on
	the longest day of the year and the
	sunset of the shortest day of the year.
	Why would this have
	been important in prehistoric times for
	working out what season of the year it was?

Websites

NASA - Moon Phases Demonstration https://www.youtube.com/watch?v=M0p6NKANE08 Year 5: Earth and Space | STEM Earth and space - KS2 Science - BBC Bitesize



Golden Thread Earth and space