

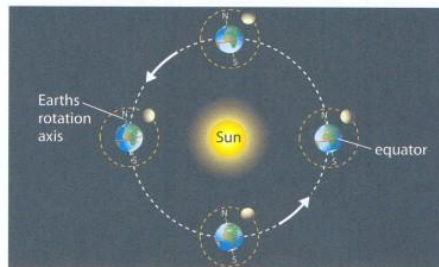
19 How does the Earth move?

- The Earth moves once around the Sun in a roughly circular orbit once a year.
- The Earth's year is not exactly 365 days.

Why is a year almost always 365 days? The answer is to do with the way the Earth orbits the Sun. Your next birthday will come around when the Earth gets back to where it started on your last birthday. Even though the Earth travels a long way, and at a fast speed, the length of a year remains the same. Isn't that amazing?

What does the Earth's orbit look like?

The Earth's orbit is nearly circular, with the Sun at the centre. Looking from above, it moves anticlockwise around the Sun. The Earth's axis is tilted as well. It spins on its axis once every day.



What else do we know about the orbit?

The Earth rushes around the Sun at 108,000 km per hour. This is very fast, but you don't feel it moving.



Year

The time it takes for the Earth to make a single orbit of the Sun.

It takes $365\frac{1}{4}$ days to make one orbit. Although this is only a little more than a year, it would gradually cause the seasons to end up at the wrong time.



So every four years we add the four $\frac{1}{4}$ days together and add an extra day onto the year. This is called a 'leap' year. It has 366 days with 29 days in February.



Pope Gregory XIII (1582)

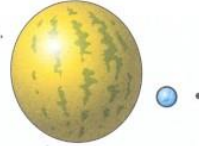
Defined the rule that a leap day would occur in any year divisible by 4.



On track

1 Mr Hills wants his class to model the Earth, Sun and Moon. He gives them some objects they can do this with.

(a) Write Earth, Moon and Sun in the table below to show what each object should model.



Melon	Marble	Poppy Seed

(b) How can the class move the objects to model what causes a year? Choose the correct statement.

- spin the Earth on its axis
- move the Earth around the Sun
- spin the Sun on its axis
- move the Sun around the Earth



Aiming higher

2 Mr Hills gave his class a short quiz.

1 The number of days it takes for the Earth to orbit the Sun.	1	7	24	28	$365\frac{1}{4}$
2 How many times the Earth spins on its axis in one day.	1	7	24	28	$365\frac{1}{4}$
3 The number of times the Earth spins on its axis in one year.	1	7	24	28	$365\frac{1}{4}$
4 The number of hours it takes for the Earth to spin once on its axis.	1	7	24	28	$365\frac{1}{4}$

(a) Copy the quiz. Circle the correct answers.

3 The years 2008, 2012 and 2016 are all leap years. They are all divisible by four. They all have an extra day, 29th February.

(a) Explain why a leap year is longer than every other year.

(b) Which of these years will be leap years? **2027 2020 2023 2032**



How well am I doing?

On track

Aiming higher

I can explain what the Earth's orbit looks like. I can explain what a leap year is.