

Planets Jigsaw

Planets Information Gap activity with writing frames

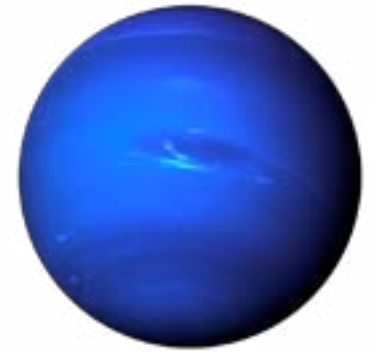


Distance from Sun in million km

Atmosphere

Gravity in Newtons per kg.

Name of Planet



Number of moons

Diameter in km



Surface temperature in degrees Celsius

Number of hours in a day

Number of months in a year



Planets Jigsaw

This information gap activity was developed by Steve Cooke. It consists of eight planet descriptions (Earth is not included) on four description sheets A, B, C and D, a blank table and a completed table. There is also a fill the gaps frame for a single planet description, and a writing frame for comparing two planets. The idea behind the activity is that students work in groups of four and extract the information for the table using one description sheet for two planets. Each student fills in their own copy of the table. Students then jigsaw so that each group contains students with four different bits of information from the different description sheet. The easiest and quickest way to jigsaw is to give students different identities in advance. You can find more detailed ways of doing this by looking at another information gap online:
e.g. <http://www.collaborativelearning.org/vanilla.pdf>

This activity can be used with the matching planets activity and the planet role play activity:

<http://www.collaborativelearning.org/planetmatching.pdf>

<http://www.collaborativelearning.org/planetstalk.pdf>

The webaddress for this activity is:

<http://www.collaborativelearning.org/planetsjigsaw.pdf>

Last updated 21st March 2016

Our activities are designed to:

...build on prior knowledge.

...move from concrete to abstract thinking.

...ensure everyone works with everyone else.

...extend social language into curriculum language.

...provide motivating ways to go over the same topic more than once.

COLLABORATIVE LEARNING PROJECT

Project Director: Stuart Scott

We support a network of teaching professionals throughout the European Union to promote inclusive education. We develop and disseminate accessible talk-for-learning activities in all subject areas and for all ages.

17, Barford Street, Islington, London N1 0QB UK Phone: 0044 (0)20 7226 8885

Website: <http://www.collaborativelearning.org>

BRIEF SUMMARY OF BASIC PRINCIPLES BEHIND OUR TEACHING ACTIVITIES:

The project is a teacher network, and a non-profit making educational trust. Our main aim is to develop and disseminate classroom tested examples of effective group strategies that promote talk across all phases and subjects. We hope they will inspire you to develop and use similar strategies in other topics and curriculum areas. We want to encourage you to change them and adapt them to your classroom and students. We run teacher workshops, swapshops and conferences throughout the European Union. The project posts online many activities in all subject areas. An online newsletter is also updated regularly.

*These activities are influenced by current thinking about the role of language in learning. They are designed to help children learn through talk and active learning in small groups. They work best in non selective classes where children in need of language or learning support are integrated. They are well suited for the development of speaking and listening. They provide teachers opportunities for assessment of speaking and listening.

*They support differentiation by placing a high value on what children can offer to each other on a particular topic, and also give children the chance to respect each other's views and formulate shared opinions which they can disseminate to peers. By helping them to take ideas and abstract concepts, discuss, paraphrase and move them about physically, they help to develop thinking skills.

*They give children the opportunity to participate in their own words and language in their own time without pressure. Many activities can be tried out in pupils' first languages and afterwards in English. A growing number of activities are available in more than one language, not translated, but mixed, so that you may need more than one language to complete the activity.

*They encourage study skills in context, and should therefore be used with a range of appropriate information books which are preferably within reach in the classroom.

*They are generally adaptable over a wide age range because children can bring their own knowledge to an activity and refer to books at an appropriate level. The activities work like catalysts.

*All project activities were planned and developed by teachers working together, and the main reason they are disseminated is to encourage teachers to work more effectively with each other inside and outside the classroom. They have made it possible for mainstream and language and learning support teachers to share an equal role in curriculum delivery. They should be adapted to local conditions. In order to help us keep pace with curriculum changes, please send any new or revised activities back to the project, so that we can add them to our lists of materials.

<http://www.collaborativelearning.org/>

Mercury

Mercury is named after the Roman Messenger of the Gods. Mercury is quite a small planet. It has a diameter of about 4,900 km. which means that it is about $2\frac{1}{2}$ times smaller than the Earth. Mercury does not have any moons. It has no atmosphere, and so the temperatures on the surface vary greatly. During the day it can be as hot as 430°C and at night it can be as low as -180°C . Even though it is near the Sun (it is about 58 million km. from the Sun), it gets cold at night, because there is no atmosphere to stop the heat radiating away from the surface.

A day on Mercury is very long. It takes about 1,400 hours to rotate once on its axis, which means that a day is nearly 60 times longer than on Earth. However, a year on Mercury is quite short because it only takes about 3 months to orbit the Sun. The gravity on Mercury is quite low. It is about 4 n/kg which means that it is nearly $2\frac{1}{2}$ times less than on Earth. Therefore on Mercury you would weigh $2\frac{1}{2}$ times less and be able to jump $2\frac{1}{2}$ times higher than on Earth.

Venus

Venus is named after the Roman Goddess of Love. It is a little bit smaller than Earth. It has a diameter of about 12,000 km. A day on Venus is very long because it takes 5,830 hours (that's about 240 Earth days) to rotate once on its axis. However, a year on Venus is shorter than on Earth because it only takes about eight Earth months to orbit the Sun.

It is very hot on Venus because it is near the Sun. It is about 108 million km from the Sun. Also it has an atmosphere made up of carbon dioxide. The atmosphere keeps the heat in and acts as an insulator. This means that the temperature on the surface of Venus is about 465°C . Venus does not have any moons. The force of gravity on Venus is about 9 n/kg which means that it is slightly less than on Earth. That means that on Venus you would weigh slightly less than on Earth and you would be able to jump slightly higher.

Mars.

Mars is named after the Roman God of War. It is further away from the Sun than Earth. It is about 228 million km from the Sun. It takes about 23 months to orbit the Sun, and so a year on Mars is nearly twice as long as on Earth. However, a day on Mars is nearly the same length as on Earth. It takes about 25 hours to rotate once on its axis.

Unlike Earth, Mars has two moons. Mars is also smaller than Earth. In fact it is a bit more than half the size of Earth, as it has a diameter of 6,800 km. It has a very thin atmosphere, which is mostly made up of carbon dioxide. Temperatures on Mars vary quite a lot. During the day it can be 25° C and at night it can be as low as -120° C. The gravity on Mars is about 2 1/2 less than on Earth. That means that on Mars you would weigh 2 1/2 less than on Earth and you would be able to jump 2 1/2 times higher.

Jupiter

Jupiter is named after the Roman King of the Gods. It is a very big planet. It has a diameter of about 143,000 km. which means that it is about eleven times bigger than Earth. It is about 778 million km. from the Sun. Therefore it takes about 142 months to orbit the Sun and so a year lasts 12 times longer than on Earth. However, a day on Jupiter is shorter than on Earth as it only takes 10 hours to rotate once on its axis.

The temperature on Jupiter is low. On the surface it is about -150 C. Its atmosphere is made up mostly of hydrogen. The force of gravity on Jupiter is very strong. It is about 26 n/kg. This means that on Jupiter you would weigh about 2 1/2 times as much as on Earth and you would find it very difficult to jump off the ground. Another difference between Jupiter and Earth is that Jupiter has 28 moons whereas Earth only has one.

Saturn

Saturn is named after the Roman God. It is about 1,427 million km. from the Sun. It takes about 354 months to orbit the Sun once and so a year on Jupiter is nearly 30 times longer than on Earth. Saturn is a big planet. It has a diameter of about 121,000 km. and so it is much bigger than Earth, nearly 10 times bigger in fact. Its atmosphere is made up mostly of hydrogen.

A day on Saturn is quite short. It takes Saturn 11 hours to rotate once on its axis. It is cold on Saturn. The temperature on the surface is about -180 C. The force of gravity on Saturn is less than on Earth. It is about 9 n/kg. This means that on Saturn you would weigh slightly less than on Earth and so you would be able to jump slightly higher. Another fact that makes Saturn different from Earth is that it does not have just one moon, it has thirty.

Uranus.

Uranus is named after the Roman God. It is about 4 times bigger than Earth. It has a diameter of about 50,500 km. It is about 2,571 million km from the Sun which means that it is about 16 times further from the Sun than Earth. Uranus takes about 1008 months to orbit the Sun and so

a year on Uranus is about 84 years on Earth. However, a day on Uranus is shorter than on Earth because it only takes Uranus 17 hours to rotate once on its axis.

Uranus has an atmosphere which is made up mostly of hydrogen. Because it is a long way from the Sun it is cold on Uranus. The surface temperature is about -210 C. Uranus has more moons than Earth. It has ten moons. Also, the force of gravity on Uranus is slightly different than on Earth. Gravity is about 8 n/kg which means that you would weigh slightly less on Uranus than you would on Earth.

Neptune.

Neptune is named after the Roman God of the Sea. It is about 4,497 million km. from the Sun and so it about thirty times further from the sun than Earth. Because it is a long way from the Sun it is very cold on Neptune. The surface temperature is about - 210 C. Also, a year on Neptune is very long as it takes 1,978 months (that's nearly 165 years) to orbit the Sun once. However, a day on Neptune is shorter than on Earth. It takes Neptune 16 hours to rotate once on its axis.

Neptune is bigger than Earth. In fact it is nearly 4 times bigger than Earth as it has a diameter of about 49,500 km. The force of gravity on Neptune is slightly stronger than on Earth. Gravity is 11n/kg. on Neptune which means that you would weigh slightly more on Neptune than on Earth. Another difference between Neptune and Earth is that Neptune has 8 moons whereas Earth only has one.

Pluto.

Pluto is named after the Roman God. It is quite a small planet. It has a diameter of about 2,300 km. This means that it is about 5 times smaller than Earth. Pluto is a long way from the Sun. It is about 5,913 million km. from the Sun which means that it is about 40 times further away from he Sun than the Earth. Because it is along way from the Sun, it takes Pluto a long time to orbit the Sun. In fact it takes Pluto 2,982 months (that's nearly 250 years) to orbit the Sun and so a year on Pluto is very long. It also takes Pluto quite a long time to rotate once on its axis. A day on Pluto lasts about 153 hours.

has an atmosphere which is made up mostly of nitrogen. It is very cold on Pluto and the surface temperature is about -230 C. Although Neptune is very different from Earth it does have one similarity. Like the Earth, Neptune has only one moon.

Name of Planet	Diameter in km	Distance from Sun in million km	Number of hours in a day	Number of months in a year	Surface temperature in degrees Celsius	Atmosphere	Number of moons	Gravity in Newtons per kg.
Mercury	4,900	58	1400	3	430 to -180	none	0	4
Venus	12,000	108	5830	8	465	carbon dioxide	0	9
Earth	12,756	150	24	12	18	nitrogen and oxygen	1	10
Mars	6,500	228	25	23	25 to -20	carbon dioxide	2	4
Jupiter	143,000	778	10	142	-150	hydrogen	28	26
Saturn	121,000	1,427	11	354	-180	hydrogen	30	9
Uranus	50,500	2,571	17	1008	-210	hydrogen	10	8
Neptune	49,500	4,497	16	1978	-230	hydrogen	8	11
Pluto	2,300	5,913	153	2982	-230	nitrogen	1	1

Name	Diameter in km	Distance from Sun in million km	Number of hours in a day	Number of months in a year	Surface temperature in degrees Celsius	Atmosphere	Number of moons	Gravity in Newtons per kg.
Mercury								
Venus								
Earth								
Mars								
Jupiter								
Saturn								
Uranus								
Neptune								
Pluto								



_____ and _____

_____ and _____ are

both planets in the _____ .

They are different in a number of ways.

First of all, _____ is _____ whereas _____

_____ is _____ . _____ has a

diameter of _____ and _____ has a diameter of

_____ .

Another difference is that _____ is farther from the Sun

than _____ . _____ is _____ from the

Sun and _____ is

A further difference is that _____ is

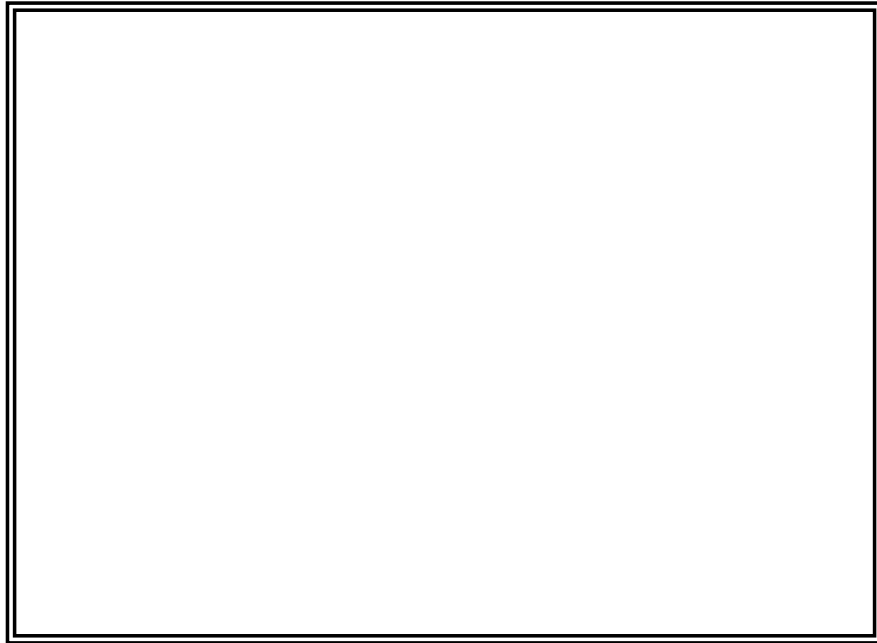
and _____ is The surface temperature of _____ is whereas on _____ it is

Furthermore, the atmospheres on both planets are different. _____ has In contrast _____ has

Both planets also have different lengths of days and years. On _____ a day and a year

On the other hand, on _____ a day is and lasts and a year is and lasts

Finally, the two planets have a different number of moons. _____ has whereas _____ has



This planet is called _____ .

Its diameter is _____ km.

It is _____ million km. from the Sun.

There are _____ hours in a day.

There are _____ months in a year.

On the surface the temperature is _____ C.

Its atmosphere is made up of _____ .

It has _____ moons.

The force of gravity is _____ .