

A picture sparks 1000 Maths Concepts

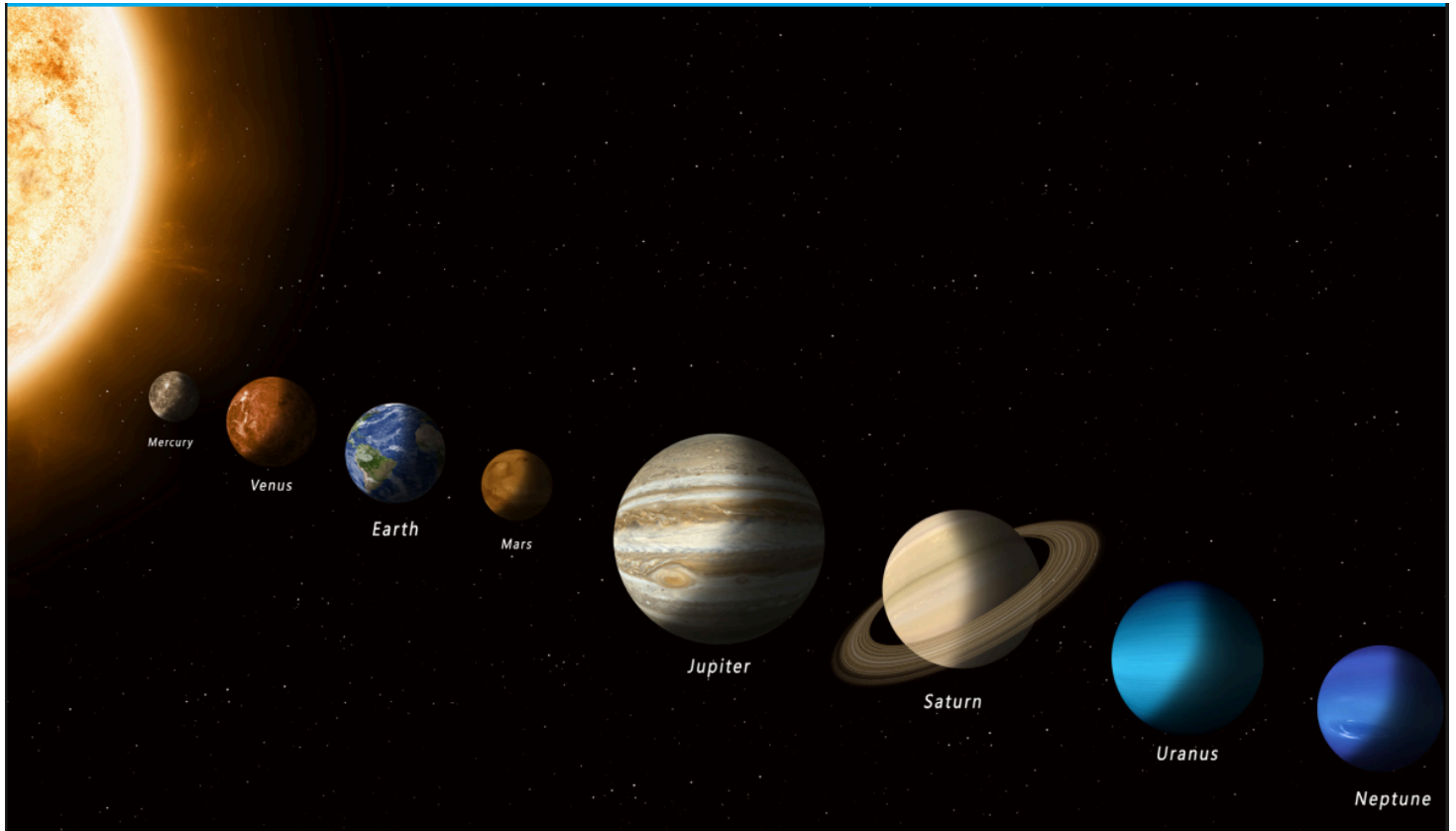


Image Credit: Mathematical Association of Victoria

On the next page you will find a list of activities you may complete as a family based on this image, you may also like to make up your own tasks and questions. The activities are separated into Junior, Middle and Senior as suggestions however you may choose any of the activities to complete. We hope you enjoy exploring some maths as a family 1
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See below for some online options for engaging maths/space games and activities you could explore at home as a family:

<p>Space Math at NASA https://science.nasa.gov/learn/heat/space-math/</p>	<p>Science Buddies- Space Activities https://www.sciencebuddies.org/stem-activities/subjects/space-exploration?cf_chl_tk=iSDWrb2QAppW91NycGOnsmMHqMFX0ogJDtETmv.ntJ0-1779162169-1.0.1.1-HX5aEOh1QqoB7CCq5DjrlXzSVh2ctc3ra2R928PVmal</p>	<p>Video: ABC- Using Math to understand the Universe https://www.abc.net.au/education/using-maths-to-understand-the-universe/13720798</p>	<p>Space Activities for little hands: https://littlebinsforlittlehands.com/space-activities-for-kids/?signlnSource=one-tap</p>	<p>NRICH https://nrich.maths.org/9086</p>	<p>EPS Website https://eps.vic.edu.au/Learning/mathematics/</p>
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Junior

- How many planets have blue on them? Can you search around your house and see if you can find the number that matches.
- What is the same about the planets? What is different?
- Do you think the planets are round or flat? Explain why?
- Do you think it would be hot or cold on each of the planets? Explain your thinking? What would be the hottest? Why?
- Can you order the planets from smallest to largest? You can cut them out if you like.
- How many planets are there altogether?
- There are 8 planets in the picture. Write down 3 numbers that are MORE than 8. Write down 3 numbers that are LESS than 8.
- If each of the planets had 2 stars next to it how many stars would there be altogether? Can you use skip counting to help you?
- Why do you think the planets seem to be half light and half dark? How might this relate to night and day?
- Earth is the third planet from the sun. Can you point to it? What planet is the 5th from the sun? Point to it.
- Earth is the only planet that humans live on. Why do you think this is? What do you notice about earth compared to the other planets? Shape, size, colour, distance from the sun.

Middle

- Below (in purple) are the diameters of some of the planets. Can you read those numbers? Can you sort them from smallest to largest?
- There are 8 planets in the solar system. Imagine some other planets are hidden behind the Sun. How many would you see and how many can't you see? Can you write a subtraction sentence to show your thinking?
- If each of the planets had 6 stars next to it how many stars would there be altogether? Could you work this out using multiplication?
- Estimate how many Earth's might fit across the sun's diameter (the distance from side to side). Make sure you round earth's diameter (12,742) before your estimation.
- Investigate the actual distance of each planet from the sun. Can you read those numbers?
- Imagine you could go on a trip to visit the planets. If you had \$350 to spend what planets would you choose? How much money would you have left?

The cost of each planet:

Mercury \$59

Venus \$15

Earth \$112

Mars \$39

Jupiter \$70

Saturn \$149

Neptune \$25

Uranus \$62

Facts:

The **Sun's diameter** is approximately 1,390,000 million kilometers.

The **diameter of Earth** is approximately 12,742 km

The **diameter of Mars** is 6,779 km.

The **diameter of Saturn** is 116,464 km.

Mars is currently 228,000,000 kilometers away from the **Sun**.

Earth is around 150,000,000 kilometers away from the **Sun**.

Senior

- Estimate how many Earth's might fit across the sun's diameter (the distance from side to side). Make sure you round earth's diameter (12,742) before your estimation.
- Investigate the actual distance of each planet from the sun. Can you make a model using a chosen scale (eg. 1cm=10 million km).
- Earth is approximately 384,400 km from the Moon. Can you halve this number? Can you double it? How about divide it by 10?
- Imagine you could go on a trip to visit the planets. If you had \$550 to spend, what planets would you choose? How much money would you have left?

The cost of each planet:

Mercury 50

Venus \$75

Earth \$113

Mars \$89

Jupiter \$158

Saturn \$143

Neptune \$130

Uranus \$125

- The average distance from Earth to the moon is about 384,400km. Imagine a space craft travelling at 10,000km per hour, calculate how long it would take to travel to the moon.
- CHALLENGE: How would your above number change if the space craft could only travel at 4,000km per hour? Compare the two times. How fast would the space craft have to travel to make the moon in 24 hours exactly?
- CHALLENGE: Calculate the percentage difference in diameter between Mars and Venus.