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How many stars are there in space?

Astronomer Brian Jackson answers a student's question about the number of stars in space, and the answer is mind-boggling.

This explainer article and resource are best suited to Earth and Space students in Years 5 and 10, learning about stars, galaxies and the universe.

Word Count / Video Length: 488 / 1:47 mins

https://education.australiascience.tv/how-many-stars-are-there-in-space/

LINKED TO SCIENCE UNDERSTANDING

	TOPIC	CONCEPTS
Biological Sciences		
Chemical Sciences		
Earth and Space Sciences	The Solar System Big Bang Theory	The Earth's Surface Earth in Space
Physical Sciences		
Additional	Careers, Maths, Technology.	

SCIENCE UNDERSTANDING TOPICS

YEAR	BIOLOGICAL SCIENCES	CHEMICAL SCIENCES	EARTH AND SPACE SCIENCES	PHYSICAL SCIENCES
R				
1				
2				
3				
4				
5			ACSSU078	
6				
7				
8				
9				
10			ACSSU188	

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QUESTIONS FOR STUDENTS, LINKED TO SCIENCE INQUIRY SKILLS	YEAR

Questioning and predicting

1. What evidence and data do you think scientists might have collected to estimate the number of stars in the universe?	5, 10
2. A) How do you think this estimate might change in the future?	
B) How might technology help with this?	10

Evaluating

1. What technology do you think might have been used to estimate the number of stars in the universe?	10
2. What STEM careers and disciplines do you think might have collaborated to answer this question?	10
3. A) How do you think this estimate might have changed over time?	10
B) Why do you think this is the case?	
4. Do you think this estimate is accurate or believable? What makes you say that?	10

Communicating

1. A) Approximately how many stars can be seen from Earth?	5, 10
B) How do you think this number compares to reality? What makes you say that?	10
C) Why can we not see more?	
2. How are astronomers able to estimate the number of stars in the Universe?	5, 10
3. A) In what galaxy is Earth located?	
B) What are the features of this galaxy?	5, 10
C) How do other galaxies compare?	
4. A) What are the features of our star, the Sun?	5, 10
B) How do other stars vary?	10
C) What do the colours of stars tell scientists about their composition?	
5. A) How many stars are there estimated to be in the universe?	5, 10
B) Write this number in scientific notation.	10

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YEAR	LINKED TO SCIENCE AS A HUMAN ENDEAVOUR	CURRICULUM CODE
Yr 5	**Nature and development of science**	
	1. Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions. **a.** *researching how scientists were able to develop ideas about the solar system through the gathering of evidence through space exploration* **b.** *researching the different types of scientists who work in teams in space exploration, and Australia's involvement in space exploration*	ACSHE081
Yr 10	**Nature and development of science**	
	1. Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community.	ACSHE191
	2. Advances in scientific understanding often rely on technological advances and are often linked to scientific discoveries. **a.** *recognising that the development of fast computers has made possible the analysis of DNA sequencing, radio astronomy signals and other data* **b.** *considering how computer modelling has improved knowledge and predictability of phenomena such as climate change and atmospheric pollution*	ACSHE192
	Use and influence of science	
	1. People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities. **a.** *recognising that the study of the universe and the exploration of space involve teams of specialists from the different branches of science, engineering and technology*	ACSHE194