



THE ECONOMICS OF SPACE TOURISM



Scan to review worksheet

Expemo code:
19QE-B1LA-MRFM



1

Warm-up

What do you know about space tourism?

2

Key words

Match the terms on the left to the definitions on the right.

- | | |
|---|--|
| 1. third-party insurance (noun) | a. coverage bought for protection against claims from another |
| 2. prompt (something) (verb) | b. formed recently but likely to grow bigger |
| 3. liquidate (verb) | c. happening often so not considered special |
| 4. nascent (adj.) | d. to make something happen |
| 5. decommission (something) (verb) | e. to sell investments or property to make money available |
| 6. administer (something) (verb) | f. to take responsibility for organising and supervising something |
| 7. collaborate (verb) | g. to take something apart because it's no longer going to be used |
| 8. commonplace (adj.) | h. to work with someone for a special purpose |

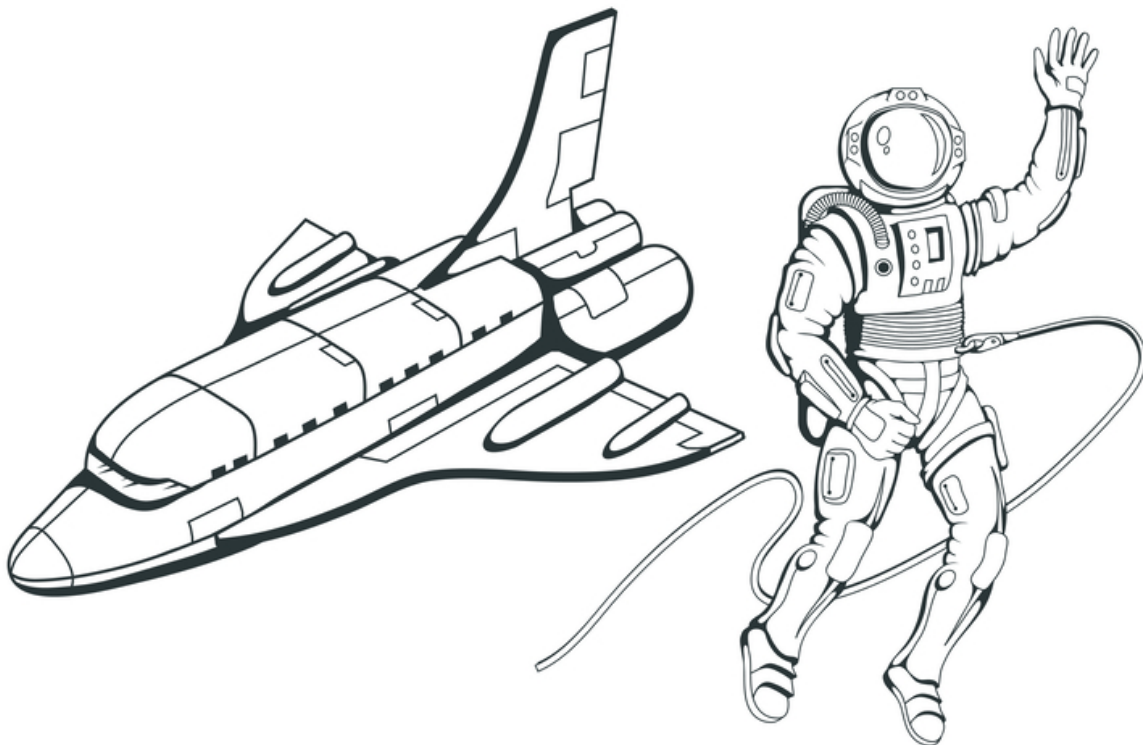


3

Before you read

You are going to read an article about the the economics of the space tourism industry. Before you read, guess the answers to the questions below, then scan the text on the next page to confirm or correct your answers.

1. How much did the first space tourist pay to take a trip into space?
 - a. US\$10m
 - b. US\$20m
 - c. US\$30m
2. How much will a passenger pay for a space flight with aerospace company Virgin Galactic?
 - a. US\$150,000
 - b. US\$200,000
 - c. US\$250,000
3. How much did the founder of Amazon's rocket cost to build?
 - a. US\$1.5 billion
 - b. US\$2 billion
 - c. US\$2.5 billion
4. How much does it cost to run the International Space Station (ISS) each year?
 - a. US\$3-4 billion
 - b. US\$4-5 billion
 - c. US\$5-6 billion





THE CONVERSATION

Space tourism economics - financing and regulating trips to the final frontier

Adapted from theconversation.com, by Loizos Heracleous, 25 July, 2018

1. American engineer and businessman Dennis Tito paid US\$20m in 2001 to become the world's first official space tourist. He travelled to the International Space Station (ISS) on a Russian spacecraft and then spent eight days on board, prompting some debate about whether it was appropriate to use the facility for financial gain. Since Tito, six other commercial passengers have visited the ISS - each trip costing US\$20m. The last passenger travelled there in 2009, after which trips were halted. But now, commercial space travel is set to start again with a much more affordable price tag.
2. To the ordinary person, commercial space travel may seem like a pipe dream, but a few well-funded space companies are starting to develop projects. Jeff Bezos has announced that a passenger flying with his aerospace company, Blue Origin, will pay between US\$200,000 and US\$300,000 for a ticket - comparable to Virgin Galactic's proposed price of US\$250,000.
3. Most of these space tourism products and technologies are still in their early stages, so for a commercial company setting a price is a delicate balancing act. Operators must settle on a figure that is low enough to be affordable for sufficient numbers of consumers, but high enough to make the service commercially sustainable.
4. Currently, Bezos' proposed price seemingly doesn't even attempt to do this. Indeed, given his outgoings, it is more of a gift to those lucky souls who have the money to spare.
5. The rocket which Blue Origin plans to use for commercial trips has been in development since 2006. It will carry six commercial astronauts on each launch, and launches cost tens of millions of dollars.
6. Jeff Bezos reportedly liquidates around US\$1 billion per year to fund Blue Origin, and the cost of the company's New Glenn rocket alone was US\$2.5 billion.
7. Six customers each paying US\$300,000 generates around US\$1.8m for Blue Origin, which doesn't even come close to the launch costs.
8. That said, this nascent market has to start somewhere. As reusable rockets have now been designed and used, launch costs have been reduced by a significant amount. Technology is still developing and the relevant companies are competing but also collaborating, so there is no reason why a financially sustainable market might not emerge in the future.
9. Flights could once again bring visitors to the ISS, which costs US\$3-4 billion a year to maintain and run and is getting close to its projected retirement date. Rather than decommission it, the US government favours gradually moving the ISS into the commercial sector.
10. However, if we look at the history books, we can see the dangers of space flight, and administering the emptiness that is space is a huge challenge to legislators. Under current regulation, commercial passengers will have to sign an "informed consent" form to confirm that they are aware of and accept the risks.
11. These forms will not cover damage to others, and spaceflight operators will need to have third-party insurance. Early international agreements state that any activity in space would need to be authorised and supervised by the state - meaning that it would be responsible for any damages caused by any entities under its banner. In future, extraterrestrial travel insurance is likely to be available from insurance companies.
12. Despite long delays to commercial space travel projects, it is a matter of *when* not *if* it becomes commonplace. Technology will advance, demand will expand, and the costs will fall, driving the innovations that should help make this a reality for generations to come.



4 Checking understanding

What do you remember? Answer the questions according to the article.

1. What debate started when Dennis Tito visited the International Space Station in 2001?
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2. What do space flight operators have to consider when they are setting their prices?
.....
3. Why are tickets for trips with Jeff Bezos' Blue Origin not considered high enough?
.....
4. What is driving launch costs down?
5. What will "informed consent" forms not cover in space?
.....
6. What do agreements say the state must do about any activities in space?
.....

5 Find the words

Find a word or phrase in the text which means.....

1. didn't continue (**verb - ed, P.1**): _____
2. the cost of something that is usually expensive (**informal phrase, P.1**): _____
3. something that you wish for but is unlikely to happen (**three word noun, P.2**): _____
4. a situation where you have to carefully treat different requirements equally (**phrase, P.3**):

5. extra cash that you don't need (**phrase, P.4**): _____
6. make a final decision about (something) (**phrasal verb, P.3**): _____
7. prefers one possibility to another (**verb, P.9**): _____
8. people who have the power to create new laws (**noun - plural, P.10**): _____

6 Talking point

Answer the questions below in pairs or small groups.

1. Would you pay \$250,000 or more to travel into space? Why or why not?
2. Do you think space tourism will become something that is not unusual? Why or why not?
3. Do you think the large amount spent on developing space tourism is a waste of money? Why or why not?