Which companies did each of these men found and in which business sector are they now all investing: Jeff Bezos, Paul Allen, Elon Musk, Sir Richard Branson?

Read the first part of the article and check your ideas.

New sources of power to replace oil and gas, perhaps. Androids that would take over any manual task, or a form of artificial intelligence that would replace white-collar work. Something that would make a lot of money, naturally — and turn established industries upside down. Instead, what you’d probably get is some kind of rocket. In the last few years, some of the world’s richest men, and perhaps more importantly its smartest entrepreneurs, have become obsessed with space. Bezos has launched Blue Origin, Musk has set up SpaceX, Allen has established Stratolaunch Systems, and Branson has been trying to get Virgin Galactic operational for years. More recently, the hotel entrepreneur Robert Bigelow has launched an inflatable living module for space. Meanwhile the Russian billionaire Yuri Milner has sunk $100 million into the search for extraterrestrial life. He has teamed up with Mark Zuckerberg, who may well have decided there are so few people left on Earth without Facebook accounts that he had better try other planets. In deference to Star Trek, you might describe all this as the ‘final frontier market’.

How good a business prospect do you think space is?

Through the 1960s, we were told of the commercial spin-offs of space exploration. Can you think of any? What do the four men’s commercial space projects plan to do?

Read the next part of the article and check your ideas.

And yet it is hard to believe that space is anything other than, if you’ll pardon my joke, a black hole. All through the great space race of the 1960s, the world was constantly told of the potential commercial spin-offs from launching men into orbit, and yet — a few useful inventions such as freeze-dried food and tin-foil ‘space blankets’ aside — very little came of it. There is no evidence that there’s
anything alive or seriously interesting out there, and certainly nothing that will make money. Then again, the entrepreneurs involved have a combined worth of more than $80 billion. If they don’t know about opening up new industries and markets, who does? It must be at least possible that they are on to something big.

There is certainly no shortage of commercial space projects. Jeff Bezos set up Blue Origin to launch private space vehicles. The twist is that the rockets will be reusable, and so far he seems to be having some success. This year, his New Shepherd rocket was launched into orbit and landed safely back in Texas, ready to be refuelled and go up again. It is probably no great surprise that Bezos is concentrating not on doing something completely new but on dramatically reducing the cost of an existing product — which is what he has done so well at Amazon.

Musk is attempting something similar with SpaceX, which also has a reusable rocket — and successfully landed it on a drone barge at sea in April. Others are taking a slightly different tack. Paul Allen’s Stratolaunch Systems is working on a new type of rocket that uses a huge plane to do the hard work of getting it close to space. Branson, perhaps most ambitious of all, is trying to create a market for space tourism, although after years of work the company has yet to take its founder or anyone else into orbit.

Which of the projects sounds the most promising to you?

What suggests commercial space exploration might not be a good investment?

Read the next part of the article and summarise the reasons in your own words.

It would be easy to dismiss commercial exploration of the solar system as a fantasy. After all, we have been here before. At the height of the 1960s space race, when men were first landed on the moon, the stock market had the ‘tronics boom’ centred on the new frontiers of electronics and space travel. It was a bit like the dotcom bubble of the late 1990s, but even more unhinged. A few companies that were little more than a wild idea racked up price-earnings ratios running into the thousands before they inevitably crashed back to Earth.

Even worse, it’s hard to see much of a conventional business case. There is a decent market in satellite systems, mainly for telecoms and broadcasting, although the rapid development of broadband means that is less useful than it was. Space tourism is always likely to be a niche market, and even space mining is not as attractive as it was a couple of years ago. The asteroid belt might be full of minerals, but aside from a few precious rarities, who wants them in current market conditions? The price of commodities has crashed down here on Earth, so there is not much point in going up into space, at fantastic cost, to get them.
And yet, despite all the obvious pitfalls, there are two strong points to be made about the commercial potential for space exploration. The first is that business possibilities are starting to open up. Last year the US Congress passed the Space Act, allowing private companies to own mineral rights outside Earth and opening up other planets to exploitation. That over-turned early agreements from the 1960s that prevented private ownership beyond Earth, at least until an international agreement was reached. True, it is hard to know what jurisdiction Congress can possibly have over Mars or Pluto: last time anyone checked, they were not part of the United States. No one knows what might happen if a case was taken to court. But — and this is the significant point — it starts the process of putting in place a legal framework that enables private ownership of extraterrestrial assets.

Secondly, technology is making space travel financially viable. It is still a very expensive game, but it is far more feasible than it once was. Nasa has estimated that the Apollo moon programme cost $200 billion in today's money. Even Bezos, with his net worth of $46 billion, couldn't begin to fund that. By contrast, a SpaceX launch costs around $100 million. It has become possible for private companies to play in this arena — and that was not true in the past. It will be a long time, decades or more, before there is a thriving private space industry. But there are few smarter entrepreneurs than Bezos, Allen or Musk. They have been proved right before, and it would be foolish to bet against them being proved right again.

Are any companies in your country developing commercial space projects?

Explain the meaning of the highlighted words in these extracts from the article:

- Imagine you were lucky enough to assemble Jeff Bezos, founder of Amazon; Paul Allen, co-founder with Bill Gates of Microsoft...
- If you asked this illustrious gathering for some investment ideas...
- ...some of the world's richest men, and perhaps more importantly its smartest entrepreneurs...
- Bezos has launched Blue Origin, Musk has set up SpaceX, Allen has established Stratolaunch Systems...
- Meanwhile the Russian billionaire Yuri Milner has sunk $100 million into the search for extraterrestrial life.
- ...the world was constantly told of the potential commercial spin-offs from launching men into orbit...
...artificial intelligence that would replace white-collar work.

...it is hard to believe that space is anything other than, if you'll pardon my joke, a black hole.

There are other idioms with black and white. Complete these with either black or white:

1. in ______ and _______ in writing
2. ________ lie a small, usually harmless false statement
3. be in the ________ be in profit or not in debt
4. ________ elephant a possession that is useless, especially one that is expensive to maintain
5. _______ and _______ (of a choice, situation, etc.) very clear
6. ________ money income illegally obtained or not declared for tax purposes

React to the sentences read to you using the idioms.

e.g. I received my salary yesterday. > So, you're in the black.

e.g. Professionals such as lawyers, accountants, etc. generally earn more than manual workers. > White-collar workers usually earn more than manual workers.
Complete these sentences with the correct form of the words above:

1. assets
2. investment
3. founder
4. stock market
5. commodities
6. entrepreneurs
7. launched
8. sunk
9. spin-offs
10. bubble

What do the highlighted expressions in these extracts from the article mean?

- white-collar = (of a job / worker) in an office, involving mental rather than physical work
- black hole = a place where people or things, especially money, disappear without a trace

There are other idioms with black and white. Complete these with either black or white:

1. black (and) white
2. white
3. black
4. white
5. black (and) white
6. black

React to the sentences read to you using the idioms.

Read these sentences to the students and get them to react using the idioms:

If you are in doubt, you can read the conditions here in the contract.
Suggested answer: The contract clearly states the conditions in black and white.

When I worked in a bar in the U.S. I didn't have a work permit, so they paid me in cash.
Suggested answer: So, they paid you in black money.

Some stadiums that they built for the World Cup haven't been used again.
Suggested answer: Projects like that often turn out to be white elephants.

I didn't like his haircut, but I told him I did.
Suggested answer: It's best to tell white lies in those situations.

I'm not sure who is right in the dispute between Kate and Helen. It's not clear.
Suggested answer: You mean it's not a black and white situation.

I won't believe the offer until I see it in writing.
Suggested answer: You'll believe it when you see it in black and white.