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# Level 3 Luxembourg to develop asteroid mining

#### 6th February, 2016

http://www.breakingnewsenglish.com/1602/160206-asteroid-mining.html

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#### Please try Levels 0, 1 and 2 (they are easier).



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# THE ARTICLE

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

The tiny European nation of Luxembourg is not well known as a major player in the space race. However, its government has just made big investments in the future industry of asteroid mining. Private companies will mine asteroids near the Earth for water and minerals. Some of the things they mine will one day help fuel trips to Mars and beyond. Luxembourg's government is looking at research and development projects to make sure it is one of the leading countries in this new industry. Minister for the economy Etienne Schneider said: "Our aim is to open access to a wealth of previously unexplored mineral resources on lifeless rocks speeding through space, without damaging natural habitats."

Luxembourg is not the only country to look up to the skies for new places to mine. In 2015, US president Barack Obama signed a law that will let American companies mine space resources. In January, the European Space Agency shared a vision for a research village on the Moon. This would be used as a base for mining companies. The US company Deep Space Industries said space resources will allow greater exploration of the solar system without the need to mine resources on Earth. However, there could be problems ahead for mining companies. The Outer Space Treaty of 1967 says that natural resources in space are part of mankind's 'common heritage'. This means private companies may not be able to mine asteroids.

Sources: http://mashable.com/2016/02/04/luxembourg-asteroid-mining-initiative/#bOJUuel.UgqM http://www.mining-technology.com/news/newsluxembourg-plans-legal-framework-asteroidmining-4801653 http://www.**spacedaily.com**/reports/Luxembourgs\_ultimate\_offshore\_investment\_Space\_ mining\_999.html

#### WARM-UPS

**1. ASTEROIDS:** Students walk around the class and talk to other students about asteroids. Change partners often and share your findings.

**2. CHAT:** In pairs / groups, talk about these topics or words from the article. What will the article say about them? What can you say about these words and your life?

*tiny / European / nation / the space race / investments / mining / wealth / minerals / space resources / vision / research / exploration / solar system / mankind / asteroids* 

Have a chat about the topics you liked. Change topics and partners frequently.

**3. EXPLORATION:** What are the benefits of these kinds of exploration? Complete this table with your partner(s). Change partners often and share what you wrote.

Exploration	Benefits
Space	
The brain	
Oceans	
Oil and gas	
Self	
Ancient history	

**4. SPACE RESOURCES:** Students A **strongly** believe it is OK for companies to take space resources; Students B **strongly** believe it is not. Change partners again and talk about your conversations.

**5. SPACE RACE:** Rank these with your partner. Put the best places to get to for resources at the top. Change partners often and share your rankings.

- asteroids
- Mars
- the Moon
- the Sun

- Jupiter
- a comet
- a black hole
- another galaxy

**6. SPACE:** Spend one minute writing down all of the different words you associate with the word "space". Share your words with your partner(s) and talk about them. Together, put the words into different categories.

# **BEFORE READING / LISTENING**

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

#### **1. TRUE / FALSE:** Read the headline. Guess if a-h below are true (T) or false (F).

- a. Luxembourg is well known for having a major role in the space race. T / F
- b. Luxembourg's government has not yet invested in asteroid mining. T / F
- c. Private companies will try to mine asteroids for water.
- d. A Luxembourg politician said he didn't want to harm natural habitats. T / F
- e. Luxembourg is the only country looking into mining space resources. T / F
- f. The European Space Agency hopes to build a village on the Moon. T / F
- g. A company said using space resources would protect Earth's resources.  $\,$  T / F
- h. A 1967 treaty allows companies to mine for space resources. T / F

#### **2. SYNONYM MATCH:** Match the following synonyms from the article.

- 1. tiny
- 2. major
- 3. near
- 4. fuel
- 5. damaging
- 6. the skies
- 7. let
- 8. base
- 9. ahead
- 10. common

a. the heavens

T/F

- b. close by
- c. in the future
- d. big
- e. centre
- f. harming
- g. very small
- h. public
- i. allow
- j. power

#### **3. PHRASE MATCH:** (Sometimes more than one choice is possible.)

- 1. well known as a major
- 2. help fuel trips to Mars
- 3. make sure it is one of
- 4. speeding
- 5. natural
- 6. look up to the skies for
- 7. This would be used as a base
- 8. exploration of the solar
- 9. there could be problems
- 10. private companies may not be able

- a. new places to mine
- b. for mining companies
- c. habitats
- d. ahead
- e. to mine asteroids
- f. and beyond
- g. system
- h. through space
- i. player in the space race
- j. the leading countries

# GAP FILL

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

The (1) European nation of Luxembourg is not well near known as a major (2) \_\_\_\_\_\_ in the space race. However, tiny its government has just made big (3) \_\_\_\_\_ in the future sure industry of asteroid mining. Private companies will mine asteroids investments (4) the Earth for water and minerals. Some of the things they mine will one day help (5) trips to speeding Mars and beyond. Luxembourg's government is looking at player research and development projects to make (6) \_\_\_\_\_\_ it aim is one of the leading countries in this new industry. Minister for the economy Etienne Schneider said: "Our (7) \_\_\_\_\_\_ is fuel to open access to a wealth of previously unexplored mineral resources on lifeless rocks (8) \_\_\_\_\_\_ through space, without damaging natural habitats."

Luxembourg is not the only country to look up to the vision (9) \_\_\_\_\_ for new places to mine. In 2015, US president ahead Barack Obama signed a (10) \_\_\_\_\_ that will let American skies companies mine space resources. In January, the European Space Agency shared a (11) \_\_\_\_\_\_ for a research village on the able Moon. This would be used as a (12) \_\_\_\_\_ for mining base companies. The US company Deep Space Industries said space law resources will allow (13) \_\_\_\_\_ exploration of the solar part system without the need to mine resources on Earth. However, there could be problems (14) \_\_\_\_\_ for mining greater companies. The Outer Space Treaty of 1967 says that natural resources in space are (15) \_\_\_\_\_\_ of mankind's 'common heritage'. This means private companies may not be (16) \_\_\_\_\_\_ to mine asteroids.

#### **LISTENING** – Guess the answers. Listen to check.

From <a href="http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html">http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html</a>

1)	The tiny European nation of Luxembourg is not well known as a major player a. on the space race b. at the space race c. in the space race d. to the space race
2)	its government has just made big investments in the future industry a. of asteroid mine in b. for asteroid mining c. for asteroid mine in d. of asteroid mining
3)	Some of the things they mine will one day help fuel trips to Mars a. and beyond b. and behind c. and bygone d. and be yonder
4)	looking at research and development projects to make sure it is one of a. the loading countries b. the leading countries c. the leaping countries d. the leading country
5)	Our aim is to open access to a wealth of previously unexplored a. mineral resource b. mineral resource is c. mineral resources d. mineral re sources
6)	Luxembourg is not the only country to look up to the skies for new a. places to mime b. places too mine c. place is to mine d. places to mine
7)	In January, the European Space Agency shared a vision for a research a. village in the Moon b. village inner Moon c. village in a Moon d. village on the Moon
8)	<ul> <li>Deep Space Industries said space resources will allow greater exploration</li> <li>a. of the sole a system</li> <li>b. of the soul a system</li> <li>c. of the solar system</li> <li>d. of the seller system</li> </ul>
9)	However, there could be problems companies a. a head for mining b. as head four mining c. ahead for mining d. a head four mining
10)	The Outer Space Treaty of 1967 says that natural resources in space are part of a. mankind is 'common heritage' b. mankind's 'commonly heritage' c. man's kind 'common heritage' d. mankind's 'common heritage'

#### **LISTENING** – Listen and fill in the gaps

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

The tiny European nation of Luxembourg is (1) \_\_\_\_\_\_\_ a major player in the space race. However, its government has just made big investments (2) \_\_\_\_\_\_\_ industry of asteroid mining. Private companies will mine asteroids near the Earth for water and minerals. Some of the things they mine will one day (3) \_\_\_\_\_\_\_ to Mars and beyond. Luxembourg's government is looking at research and development projects to make (4) \_\_\_\_\_\_\_ of the leading countries in this new industry. Minister for the economy Etienne Schneider said: "Our aim is (5) \_\_\_\_\_\_\_ a wealth of previously unexplored mineral resources on lifeless rocks (6) \_\_\_\_\_\_\_ space, without damaging natural habitats."

Luxembourg (7) \_\_\_\_\_ country to look up to the skies for places to mine. In 2015, US president Barack Obama new (8) \_\_\_\_\_\_ will let American companies mine space resources. In January, the European Space Agency shared a vision for a research village on the Moon. This would (9) \_\_\_\_\_ base for mining companies. The US company Deep Space Industries said space resources (10) \_\_\_\_\_ exploration of the solar system without the need to mine resources on Earth. However, (11) \_\_\_\_\_\_ problems ahead for mining companies. The Outer Space Treaty of 1967 says that natural resources in space are part of mankind's 'common heritage'. This means private companies may (12) mine asteroids.

# **COMPREHENSION QUESTIONS**

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

- 1. What does the article say Luxembourg is not well known for?
- 2. What will private companies mine asteroids for?
- 3. Where will space resources help fuel future trips to?
- 4. What is Etienne Schneider's job?
- 5. What are "lifeless rocks" speeding through?
- **6.** Who might a space village on the Moon be used by?
- 7. What could space resources allow greater exploration of?
- **8.** What did the article say might be ahead for mining companies?
- 9. When was the Outer Space Treaty signed?
- 10. What did the Outer Space Treaty say space resources are part of?

# **MULTIPLE CHOICE - QUIZ**

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

- What does the article say Luxembourg Who might a space village on the Moon 6. 1. is not well known for? be used by? a) building space rockets a) mining companies b) Luxembourg's space tourists b) the space race c) professors c) asteroid mining d) Moon landings d) everyone on Earth What will private companies mine What could space resources allow 2. 7. asteroids for? greater exploration of? a) coal a) the Moon b) plutonium b) faraway galaxies c) water and minerals c) our brains d) gold d) the solar system 3. Where will space resources help fuel 8. What did the article say might be ahead future trips to? for mining companies? a) Pluto a) Pluto b) a bright future b) the Sun c) another galaxy c) problems d) Mars and beyond d) exciting times 4. What is Etienne Schneider's job? 9. When was the Outer Space Treaty signed? a) investment analyst a) 1697 b) minister for the economy b) 1796 c) professor of asteroids c) 1976 d) 1967 d) astronaut What are "lifeless rocks" speeding 10. What did the Outer Space Treaty say 5. through? space resources are part of? a) space a) the Earth b) mankind's 'common heritage' b) the Sun
  - c) asteroids
  - d) time

- c) the universe
- d) Deep Space Industries

# **ROLE PLAY**

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

#### Role A – Asteroids

You think an asteroid is the best place to get resources for Earth. Tell the others three reasons why. Tell them things that aren't so good about their places. Also, tell the others which is the least useful of these (and why): Mars, the Sun or another galaxy.

#### Role B – Mars

You think Mars is the best place to get resources for Earth. Tell the others three reasons why. Tell them things that aren't so good about their places. Also, tell the others which is the least useful of these (and why): asteroids, the Sun or another galaxy.

#### Role C – The Sun

You think the Sun is the best place to get resources for Earth. Tell the others three reasons why. Tell them things that aren't so good about their places. Also, tell the others which is the least useful of these (and why): Mars, asteroids or another galaxy.

#### **Role D – Another galaxy**

You think another galaxy is the best place to get resources for Earth. Tell the others three reasons why. Tell them things that aren't so good about their places. Also, tell the others which is the least useful of these (and why): Mars, the Sun or asteroids.

# AFTER READING / LISTENING

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

**1. WORD SEARCH:** Look in your dictionary / computer to find collocates, other meanings, information, synonyms ... for the words 'space' and 'race'.

space	race

- Share your findings with your partners.
- Make questions using the words you found.
- Ask your partner / group your questions.

**2. ARTICLE QUESTIONS:** Look back at the article and write down some questions you would like to ask the class about the text.

- Share your questions with other classmates / groups.
- Ask your partner / group your questions.

**3. GAP FILL:** In pairs / groups, compare your answers to this exercise. Check your answers. Talk about the words from the activity. Were they new, interesting, worth learning...?

**4. VOCABULARY:** Circle any words you do not understand. In groups, pool unknown words and use dictionaries to find their meanings.

**5. TEST EACH OTHER:** Look at the words below. With your partner, try to recall how they were used in the text:

# **ASTEROID MINING SURVEY**

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

Write five GOOD questions about asteroid mining in the table. Do this in pairs. Each student must write the questions on his / her own paper.

When you have finished, interview other students. Write down their answers.

	STUDENT 1	STUDENT 2	STUDENT 3
Q.1.			
Q.2.			
Q.3.			
Q.4.			
Q.5.			

- Now return to your original partner and share and talk about what you found out. Change partners often.
- Make mini-presentations to other groups on your findings.

# **ASTEROID MINING DISCUSSION**

STUDENT A's QUESTIONS (Do not show these to student B)

- 1) What did you think when you read the headline?
- 2) What springs to mind when you hear the word 'mining'?
- 3) What mining is there in your country?
- 4) Is mining good or bad?
- 5) What do you think of the idea of asteroid mining?
- 6) Do you think asteroid mining is a good thing to invest in?
- 7) How useful could asteroid mining be?
- 8) What are the dangers of asteroid mining?
- 9) What would it be like to work as an asteroid miner?
- 10) What other things in space could we use to help the Earth?

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#### **ASTEROID MINING DISCUSSION**

STUDENT B's QUESTIONS (Do not show these to student A)

- 11) Did you like reading this article? Why/not?
- 12) What do you know about Luxembourg?
- 13) What do you know about asteroids?
- 14) How might asteroid mining help the Earth?
- 15) Will countries have fights over who mines which asteroid?
- 16) Do you think there will be a space war one day?
- 17) Do you think it's ok to mine the Moon?
- 18) What kind of things do you think are in a space treaty?
- 19) Is it ok for private companies to make money from asteroids?
- 20) What would you like to ask an asteroid mining company boss?

### **DISCUSSION (Write your own questions)**

STUDENT A's QUESTIONS (Do not show these to student B)

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3.	2	
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	4.	
6	5.	
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# **DISCUSSION (Write your own questions)**

STUDENT B's QUESTIONS (Do not show these to student A)


### LANGUAGE - CLOZE

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

The (1) \_\_\_\_\_ European nation of Luxembourg is not well (2) \_\_\_\_\_ as a major player in the space race. However, its government has just made big investments in the (3) \_\_\_\_\_ industry of asteroid mining. Private companies will mine asteroids near the Earth for water and minerals. Some of the things they mine will one day help fuel (4) \_\_\_\_\_ to Mars and beyond. Luxembourg's government is looking at research and development projects to (5) \_\_\_\_\_ sure it is one of the leading countries in this new industry. Minister for the economy Etienne Schneider said: "Our aim is to open access to a (6) \_\_\_\_\_ of previously unexplored mineral resources on lifeless rocks speeding through space, without damaging natural habitats."

Luxembourg is not the only country to look up to the (7) \_\_\_\_\_ for new places to mine. In 2015, US president Barack Obama (8) \_\_\_\_\_ a law that will let American companies mine space resources. In January, the European Space Agency shared a vision for a research village on the Moon. This would be used as a (9) \_\_\_\_\_ for mining companies. The US company Deep Space Industries said space resources will allow (10) \_\_\_\_\_ exploration of the solar system without the need to mine resources on Earth. However, there could be problems (11) \_\_\_\_\_ for mining companies. The Outer Space Treaty of 1967 says that natural resources in space are part (12) \_\_\_\_\_ mankind's 'common heritage'. This means private companies may not be able to mine asteroids.

#### Put the correct words from the table below in the above article.

1.	(a)	teeny	(b)	tiny	(c)	tinned	(d)	tinny
2.	(a)	knowledge	(b)	knows	(c)	knowing	(d)	known
3.	(a)	furthered	(b)	future	(c)	further	(d)	futures
4.	(a)	triples	(b)	triple	(c)	trips	(d)	tripe
5.	(a)	make	(b)	take	(c)	have	(d)	do
6.	(a)	wealth	(b)	rich	(c)	fund	(d)	finance
7.	(a)	skies	(b)	cloud	(c)	air	(d)	airspace
8.	(a)	signed	(b)	signature	(c)	singed	(d)	signage
9.	(a)	baste	(b)	base	(c)	bias	(d)	basic
10.	(a)	grater	(b)	greeter	(c)	greater	(d)	greats
11.	(a)	front	(b)	leading	(c)	ahead	(d)	forward
12.	(a)	for	(b)	of	(c)	from	(d)	off

# SPELLING

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

#### Paragraph 1

- 1. a <u>aromj</u> player in the space race
- 2. the future <u>tysniudr</u> of asteroid mining
- 3. help fuel trips to Mars and <u>enbody</u>
- 4. research and development <u>eorjptsc</u>
- 5. mineral <u>esrsoeurc</u>
- 6. without damaging natural <u>aattihsb</u>

#### Paragraph 2

- 7. look up to the <u>sseik</u>
- 8. the European Space Agency shared a <u>nosiiv</u>
- 9. exploration of the solar <u>etysms</u>
- 10. there could be problems <u>hadae</u>
- 11. part of mankind's <u>mnomoc</u> heritage
- 12. <u>parveit</u> companies

## PUT THE TEXT BACK TOGETHER

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

#### Number these lines in the correct order.

- () signed a law that will let American companies mine space resources. In January, the European Space
- ( ) Luxembourg is not the only country to look up to the skies for new places to mine. In 2015, US president Barack Obama
- ( ) development projects to make sure it is one of the leading countries in this new industry. Minister for the
- ( ) Agency shared a vision for a research village on the Moon. This would be used as a base
- ( ) economy Etienne Schneider said: "Our aim is to open access to a wealth of previously unexplored mineral resources on
- ( ) exploration of the solar system without the need to mine resources on Earth. However, there could be problems
- ( ) of mankind's 'common heritage'. This means private companies may not be able to mine asteroids.
- ( ) for mining companies. The US company Deep Space Industries said space resources will allow greater
- ( ) race. However, its government has just made big investments in the future industry of asteroid mining. Private
- ( ) companies will mine asteroids near the Earth for water and minerals. Some of the things they mine will one
- ( ) lifeless rocks speeding through space, without damaging natural habitats."
- ( ) ahead for mining companies. The Outer Space Treaty of 1967 says that natural resources in space are part
- (**1**) The tiny European nation of Luxembourg is not well known as a major player in the space
- ( ) day help fuel trips to Mars and beyond. Luxembourg's government is looking at research and

#### PUT THE WORDS IN THE RIGHT ORDER

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

- 1. player major a as known well Not race space the in .
- 2. government Its investments big made just has .
- 3. asteroids Private near companies the will Earth mine .
- 4. sure make to Projects countries leading the of one is it .
- 5. mineral unexplored previously of wealth A resources .
- 6. new places to mine Look up to the skies for .
- 7. look only places skies up country for to to The new the .
- 8. as for This used base companies be a mining would .
- 9. in part common Resources are mankind's space of heritage .
- 10. asteroids companies be mine Private not to may able .

# **CIRCLE THE CORRECT WORD (20 PAIRS)**

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

The tiny European *nation / national* of Luxembourg is not well *known / knowing* as a major *play / player* in the space race. However, its government has just made big investments in the future industry of asteroid mining. Private companies will mine asteroids *near / nearly* the Earth for water and minerals. Some of the *thing / things* they mine will one day help fuel trips to Mars and beyond. Luxembourg's government is looking at research *to / and* development projects to make sure it is *one / once* of the leading countries in this new industry. Minister for the economy Etienne Schneider said: "Our aim is to open *accessible / access* to a wealth of previously unexplored mineral resources on lifeless rocks *speed / speeding* through space, without *damaging / damage* natural habitats."

Luxembourg is not the only country to look *down / up* to the skies for new places *to / for* mine. In 2015, US president Barack Obama *singed / signed* a law that will let American companies mine space resources. In January, the European Space Agency *shared / shore* a vision for a research *village / villager* on the Moon. This would be used as a *baste / base* for mining companies. The US company Deep Space Industries said space resources will allow greater exploration of the *sole / solar* system without the need to mine resources on Earth. However, there could be problems *heading / ahead* for mining companies. The Outer Space Treaty of 1967 says that natural resources in space are part of mankind's *'common / commonly* heritage'. This means private companies may not be *ability / able* to mine asteroids.

# Talk about the connection between each pair of words in italics, and why the correct word is correct.

### **INSERT THE VOWELS (a, e, i, o, u)**

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

Th\_ t\_ny \_\_r\_p\_\_n n\_t\_\_n \_f L\_x\_mb\_\_rg \_s n\_t w\_ll kn\_wn \_s \_ m\_j\_r pl\_y\_r \_n th\_ sp\_c\_ r\_c\_. H\_w\_v\_r, \_ts g\_v\_rnm\_nt h\_s j\_st m\_d\_ b\_g \_nv\_stm\_nts \_n th\_ f\_t\_r\_ \_nd\_stry \_f \_st\_r\_\_d m\_n\_ng. Pr\_v\_t\_ c\_mp\_n\_s w\_ll m\_n\_ \_st\_r\_\_ds n\_\_r th\_ \_\_rth f\_r w\_t\_r \_nd m\_n\_r\_ls. S\_m\_ \_f th\_ th\_ngs th\_y m\_n\_ w\_ll \_n\_ d\_y h\_lp f\_\_l tr\_ps t\_ M\_rs \_nd b\_y\_nd. L\_x\_mb\_\_rg's g\_v\_rnm\_nt \_s l\_\_k\_ng \_t r\_s\_\_rch \_nd d\_v\_l\_pm\_nt pr\_j\_cts t\_ m\_k\_ s\_r\_\_t \_s \_n\_ \_f th\_ l\_d\_ng c\_\_ntr\_\_s \_n th\_s n\_w \_nd\_stry. M\_n\_st\_r f\_r th\_ \_c\_n\_my \_t\_\_nn\_ Schn\_\_d\_r s\_\_d: "\_\_r \_\_m \_s t\_ \_p\_n \_cc\_ss t\_ w\_\_lth \_f pr\_v\_\_sly \_n\_xpl\_r\_d m\_n\_r\_l r\_s\_rc\_s \_n l\_f\_l\_ss r\_cks sp\_\_d\_ng thr\_\_gh

L\_x\_mb\_\_rg \_s n\_t th\_ \_nly c\_\_ntry t\_ l\_\_k \_p t\_ th\_ sk\_\_s f\_r n\_w pl\_c\_s t\_ m\_n\_. \_n 2015, \_S pr\_s\_d\_nt B\_r\_ck \_b\_m\_ s\_gn\_d \_ l\_w th\_t w\_ll l\_t \_m\_r\_c\_n c\_mp\_n\_s m\_n\_ sp\_c\_ r\_s\_rc\_s. \_n J\_n\_\_ry, th\_ \_\_r\_p\_\_n Sp\_c\_ \_g\_ncy sh\_r\_d \_ v\_s\_\_n f\_r \_ r\_s\_rch v\_ll\_g\_ \_n th\_ M\_\_n. Th\_s w\_\_ld b\_ \_s\_d \_s \_ b\_s\_ f\_r m\_n\_ng c\_mp\_n\_s. Th\_ \_S c\_mp\_ny D\_\_p Sp\_c\_ \_nd\_str\_s s\_\_d sp\_c\_ r\_s\_rc\_s w\_ll \_ll\_w gr\_t\_r \_xpl\_r\_t\_n \_f th\_ s\_l\_r syst\_m w\_th\_\_t th\_ n\_\_d t\_ m\_n\_ r\_s\_rc\_s \_n \_\_rth. H\_w\_v\_r, th\_r\_ c\_\_ld b\_ pr\_bl\_ms \_h\_d f\_r m\_n\_ng c\_mp\_n\_s. Th\_ \_tr Sp\_c\_ \_r\_ p\_rt \_f m\_nk\_nd's 'c\_mm\_n h\_r\_t\_g\_'. Th\_s m\_\_ns pr\_v\_t\_ c\_mp\_n\_s m\_y n\_t b\_ \_bl\_ t\_ m\_n \_st\_r\_ds.

#### PUNCTUATE THE TEXT AND ADD CAPITALS

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

The tiny European nation of Luxembourg is not well known as a major player in the space race However its government has just made big investments in the future industry of asteroid mining Private companies will mine asteroids near the Earth for water and minerals Some of the things they mine will one day help fuel trips to Mars and beyond Luxembourg's government is looking at research and development projects to make sure it is one of the leading countries in this new industry Minister for the economy Etienne Schneider said "Our aim is to open access to a wealth of previously unexplored mineral resources on lifeless rocks speeding through space without damaging natural habitats"

Luxembourg is not the only country to look up to the skies for new places to mine In 2015 US president Barack Obama signed a law that will let American companies mine space resources In January the European Space Agency shared a vision for a research village on the Moon This would be used as a base for mining companies The US company Deep Space Industries said space resources will allow greater exploration of the solar system without the need to mine resources on Earth However there could be problems ahead for mining companies The Outer Space Treaty of 1967 says that natural resources in space are part of mankind's 'common heritage' This means private companies may not be able to mine asteroids

# PUT A SLASH ( / ) WHERE THE SPACES ARE

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

ThetinyEuropeannationofLuxembourgisnotwellknownasamajorplay erinthespacerace.However,itsgovernmenthasjustmadebiginvestm entsinthefutureindustryofasteroidmining.Privatecompanieswillmin easteroidsneartheEarthforwaterandminerals.Someofthethingsthey minewillonedayhelpfueltripstoMarsandbeyond.Luxembourg'sgover nmentislookingatresearchanddevelopmentprojectstomakesureitiso neoftheleadingcountriesinthisnewindustry.MinisterfortheeconomyE tienneSchneidersaid:"Ouraimistoopenaccesstoawealthofpreviously unexploredmineralresourcesonlifelessrocksspeedingthroughspace, withoutdamagingnaturalhabitats."Luxembourgisnottheonlycountry tolookuptotheskiesfornewplacestomine.In2015,USpresidentBarack ObamasignedalawthatwillletAmericancompaniesminespaceresourc es.InJanuary,theEuropeanSpaceAgencysharedavisionforaresearch villageontheMoon.Thiswouldbeusedasabaseforminingcompanies.T heUScompanyDeepSpaceIndustriessaidspaceresourceswillallowgr eaterexplorationofthesolarsystemwithouttheneedtomineresources onEarth.However,therecouldbeproblemsaheadforminingcompanies .TheOuterSpaceTreatyof1967saysthatnaturalresourcesinspaceare partofmankind's'commonheritage'. Thismeansprivatecompanies ma ynotbeabletomineasteroids.

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### FREE WRITING

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

Write about **asteroid mining** for 10 minutes. Comment on your partner's paper.


### ACADEMIC WRITING

From http://www.BreakingNewsEnglish.com/1602/160206-asteroid-mining.html

Mining asteroids and other space resources is a great idea. Discuss.

#### HOMEWORK

**1. VOCABULARY EXTENSION:** Choose several of the words from the text. Use a dictionary or Google's search field (or another search engine) to build up more associations / collocations of each word.

**2. INTERNET:** Search the Internet and find out more about the US company Deep Space Industries. Share what you discover with your partner(s) in the next lesson.

**3. ASTEROID MINING:** Make a poster about asteroid mining. Show your work to your classmates in the next lesson. Did you all have similar things?

**4. SPACE RESOURCES:** Write a magazine article about mining for space resources. Include imaginary interviews with people who are for and against it.

Read what you wrote to your classmates in the next lesson. Write down any new words and expressions you hear from your partner(s).

**5. WHAT HAPPENED NEXT?** Write a newspaper article about the next stage in this news story. Read what you wrote to your classmates in the next lesson. Give each other feedback on your articles.

**6. LETTER:** Write a letter to an expert on space resources. Ask him/her three questions about them. Give him/her three of your ideas on how they could help us on Earth. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

#### **ANSWERS**

#### TRUE / FALSE (p.4)

а	F	b	F	с	Т	d	Т	е	F	f	Т	а	Т	h	F
<u>u</u>				<u> </u>		<u> </u>		<u> </u>							

#### SYNONYM MATCH (p.4)

- 1. tiny
- 2. major
- 3. near
- 4. fuel
- 5. damaging
- 6. the skies
- 7. let
- 8. base
- 9. ahead
- 10. common

- a. very small
- b. big
- c. close by
- d. power
- e. harming
- f. the heavens
- g. allow
- h. centre
- i. in the future
- j. public

#### **COMPREHENSION QUESTIONS (p.8)**

- 1. The space race
- 2. Minerals and water
- 3. Mars and beyond
- 4. Luxembourg's minister for the economy
- 5. Space
- 6. Mining companies
- 7. The solar system
- 8. Problems
- 9. 1967
- 10. Mankind's 'common heritage'

#### MULTIPLE CHOICE - QUIZ (p.9)

1. b 2. c 3. d 4. b 5. a 6. a 7. d 8. c 9. d 10. b

#### **ALL OTHER EXERCISES**

Please check for yourself by looking at the Article on page 2. (It's good for your English ;-)