Unit 1 SCIENCE AND SCIENTISTS

Lesson 2 Reading and Thinking (2) & Build up your vocabulary

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Aims of this lesson

1. To analyse the qualities of John Snow as a scientist;
2. To learn some important words and expressions about science and scientists;
3. To master some skills of learning words and expressions.

Revision

The stages of scientific research

1. find a problem
2. ask a question
3. think of a method
4. collect data
5. analyse the results
6. find supporting evidence
7. draw a conclusion

John Snow's **questioning mind** is of great importance in conducting the research.

Further thinking

What kind of person do you think John Snow is as a great scientist?

Use the facts and details from the text to support your idea.

Further thinking

What kind of person do you think John Snow is as a great scientist?

Para.1

JOHN SNOW DEFEATS "KING CHOLERA"

Cholera used to be one of the most feared diseases in the world, until a British doctor, John Snow, showed how it could be overcome. This illness causes **severe** diarrhoea, dehydration, and even death. In the early 19th century, when an outbreak of cholera hit Europe, millions of people died from the disease. As a young doctor, John Snow became frustrated because no one knew how to prevent or treat cholera. In time, he rose to become a famous doctor, and even attended to Queen Victoria when she gave birth. However, he never lost his desire to destroy cholera once and for all.

brave

caring,

socially

responsible

expert

determined

Further thinking

What kind of person do you think John Snow is as a great scientist?

Para.2

In general, doctors in those days had two **contradictory** theories to explain how cholera spread. One theory was that bad air caused the disease. Another was that cholera was caused by an **infection** from germs in food or water. Snow **subscribed** to the second theory. It was correct, but he still needed **proof**. Consequently, when an outbreak of cholera hit London in 1854, Snow began to investigate. He discovered that in two particular streets the cholera outbreak was so severe that more than 500 people died in ten days. He was determined to find out why.

knowledgeable

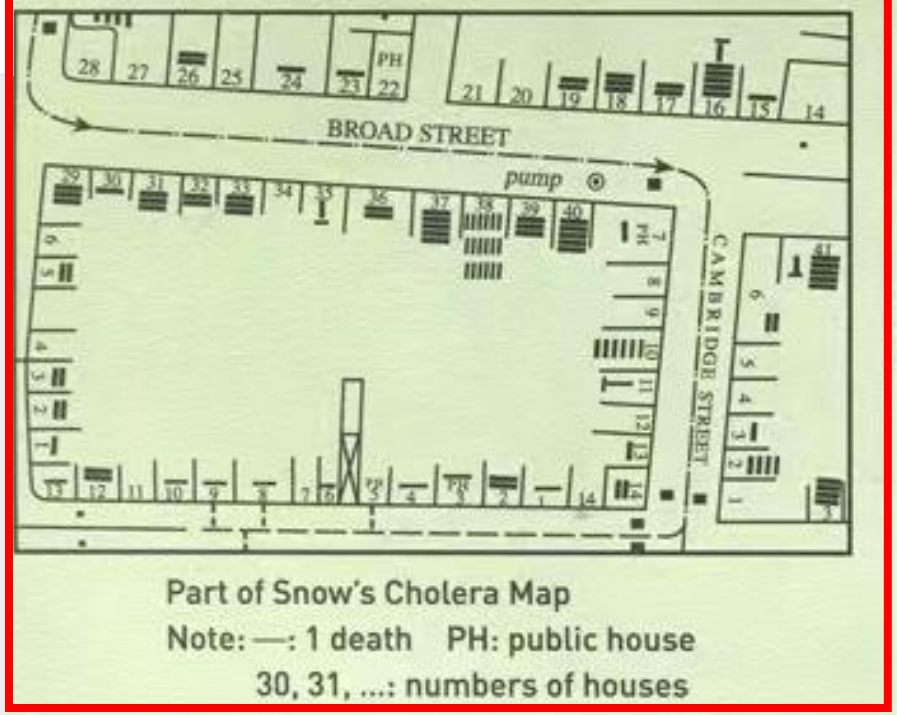
rigorous (严谨的)

determined, curious

Further thinking

What kind of person do you think John Snow is as a great scientist?

Para.3



Part of Snow's Cholera Map
Note: —: 1 death PH: public house
30, 31, ...: numbers of houses

Snow began by marking on a map the exact places where all those who died had lived. There were **multiple** deaths near the water pump in Broad Street (especially house numbers 16, 37, 38, and 40). However, some **households** (such as 20 and 21 Broad Street, and 8 and 9 Cambridge Street) had had no deaths. These people worked in the pub at 7 Cambridge Street. They had been given free beer, and so had not drunk the water from the pump. Snow **suspected** that the water pump was to **blame**. What is more, in another part of London, a woman and her daughter had died of cholera after moving away from Broad Street. It seemed that the woman liked the water from the pump so much that she had it delivered to her house every day. As a result of this evidence, John Snow was able to announce that the pump water carried cholera germs. Accordingly, he had the **handle** of the pump removed so that it could not be used. Through this **intervention**, the disease was stopped in its tracks.

detail-oriented (注重细节的)

rigorous (严谨的) / careful

Further thinking

What kind of person do you think John Snow is as a great scientist?

Para.5

devoted

Through Snow's tireless efforts, water companies began to sell clean water, and the threat of cholera around the world saw a **substantial decrease**. However, cholera is still a problem. Each year, millions of people around the world get cholera and many die from it. Fortunately, we now know how to prevent cholera, thanks to the work of John Snow. Moreover, in his use of maps and **statistics**, Snow **transformed** the way scientists study diseases. For this reason, Snow is considered the father of modern epidemiology.

creative, innovative (创新的)

Qualities of John Snow as a great scientist

caring

socially responsible

expert

brave

creative

rigorous

knowledgeable

innovative

determined

devoted

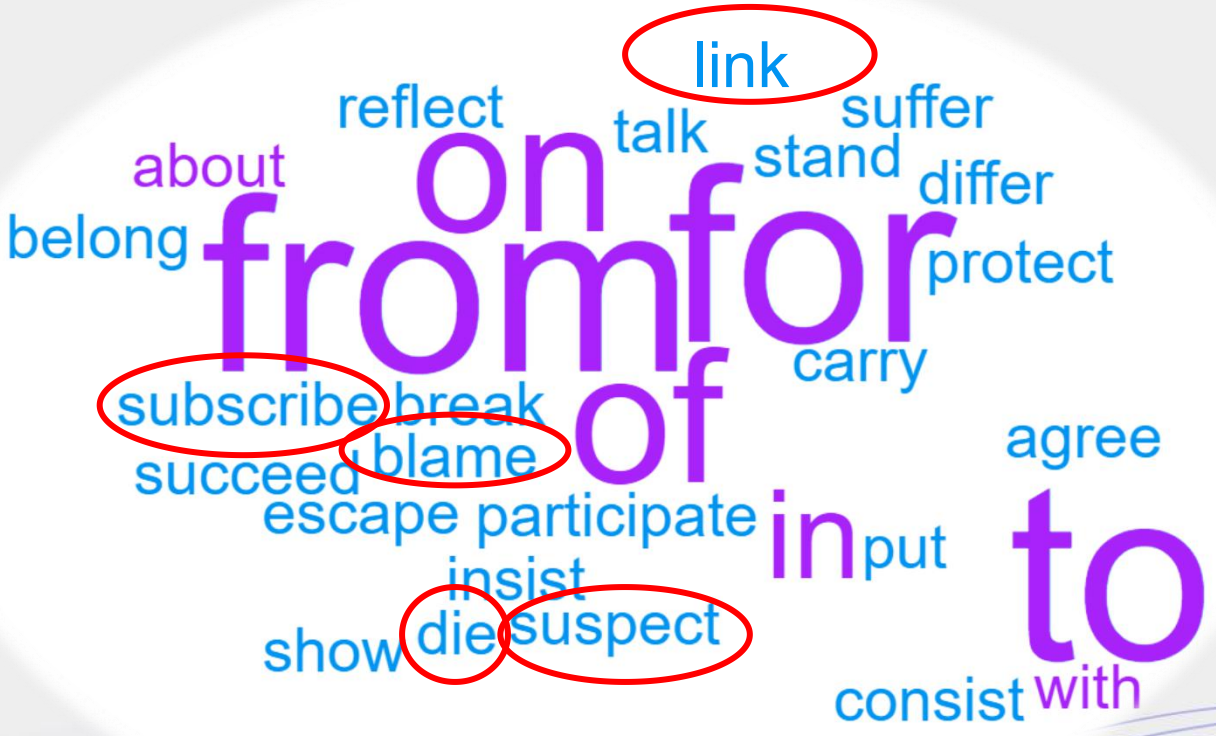
curious

detail-oriented

the father of modern epidemiology

Build up your vocabulary

Circle the **verbs** used in the reading passage and find the **preposition** that can go with them.



die of

blame for

suspect ... of ...

subscribe to

link…to…

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Read the sentences and tell the meaning of the underlined phrases. Think about where we can use them.

to pay to get a product regularly 定期订阅、订购 habit

1. Many scientists **subscribe to** a few science magazines to keep up to date with the latest research news. to agree with 同意 opinion
2. John Snow **subscribed** firmly **to** the belief that cholera was caused by an infection from germs in food or water.

n. 隔离；检疫

3. If a person **is suspected of** an infection, his/her family members should be put in **quarantine**. to believe that something, usually bad, may be true 怀疑，认为（某事有可能） opinion
4. There was no evidence to suggest that the disease **was linked to** bad air. be connected to cause
5. The hot weather is partly to **blame for** the water shortage. to be responsible for 归咎于 cause

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TB P.4 Ex.2 Make phrases by combining the words in the left box with those on the right. Then complete the sentences using these phrases.

Tip 1: learn words in collocations (词汇搭配).

subscribe suspect blame link	**to of for**

1. Many scientists ___subscribe to___ the view that it is human activity that has caused global warming.
2. He was to ___blame for___ the accident because he drove on the wrong side of the road.
3. The man ___suspected of___ being behind the robbery was seen crossing the street.
4. Since heart disease is often ___linked to___ our lifestyle choices, we need to make healthy living an important part of our lives.

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TB P.4 Ex.3 Replace the underlined parts with suitable words from the box. Think about where we can use them.

Tip 2: understand the meanings of words through their synonyms (近义词).

raw　a household name　substantial　statistics　handle

1. It is not unusual for an athlete to be well known while he is active, and quickly forgotten when his athletic career is over.

a household name

fame

2. I'm sure she'll deal with the changes very well because she's very adaptable.

handle

solution

3. He was ready to serve dinner to his friends when he realized that he had forgotten to turn on the oven and the meat was not cooked yet.

raw

characteristic（特征）

4. He used his great influence to change the thinking of the scientific community on this issue.

substantial

importance, size, amount…

5. Scientists have collected more data than expected to prove the theory.

statistics

scientific method

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TB P.4 Ex.4 Read this passage about medical science. Complete it using the words below.

infection multiple decrease severe transform proof blame substantial

有意义 n. 蛋白质 n. 细胞

British scientists believe they may have found a way to fight the common cold. It blocks a key **protein** in the body **cells** that is to ___blame___ for the spread of cold-causing virus. Targeting the host rather than ___infection___ was a bit non-traditional but **made sense** because it was tricky to target the virus. Cold-causing virus are not only of ___multiple___ kinds, they also ___transform___ rapidly, meaning they can quickly develop resistance to medicine. Researchers are working on making a form of medicine that can be taken directly into one's **lungs**, to ___decrease___ the chance of **side effects**. Though these scientists have made ___substantial___ advances in their research, further ___proof___ is needed to make sure such drugs are not so ___severe___ that they harm the body.

n. 肺 副作用

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British scientists believe they may have found a way to fight the common cold. It blocks a key **protein** in the body **cells** that is to ___blame___ for the spread of cold-causing virus. Targeting the host rather than ___infection___ was a bit non-traditional but **made sense** because it was tricky to target the virus. Cold-causing virus are not only of ___multiple___ kinds, they also ___transform___ rapidly, meaning they can quickly develop resistance to medicine. Researchers are working on making a form of medicine that can be taken directly into one's **lungs**, to ___decrease___ the chance of **side effects**. Though these scientists have made ___substantial___ advances in their research, further ___proof___ is needed to make sure such drugs are not so ___severe___ that they harm the body.

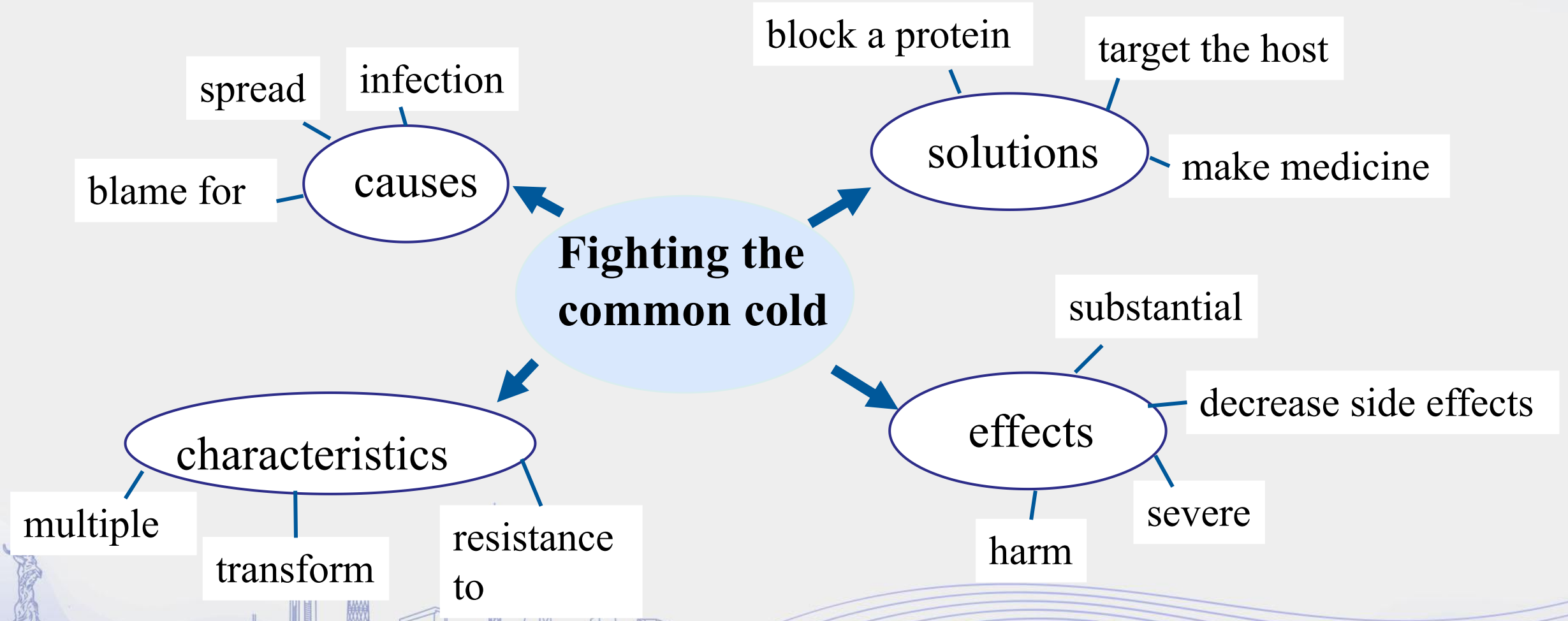
Topic sentence

cause and solution

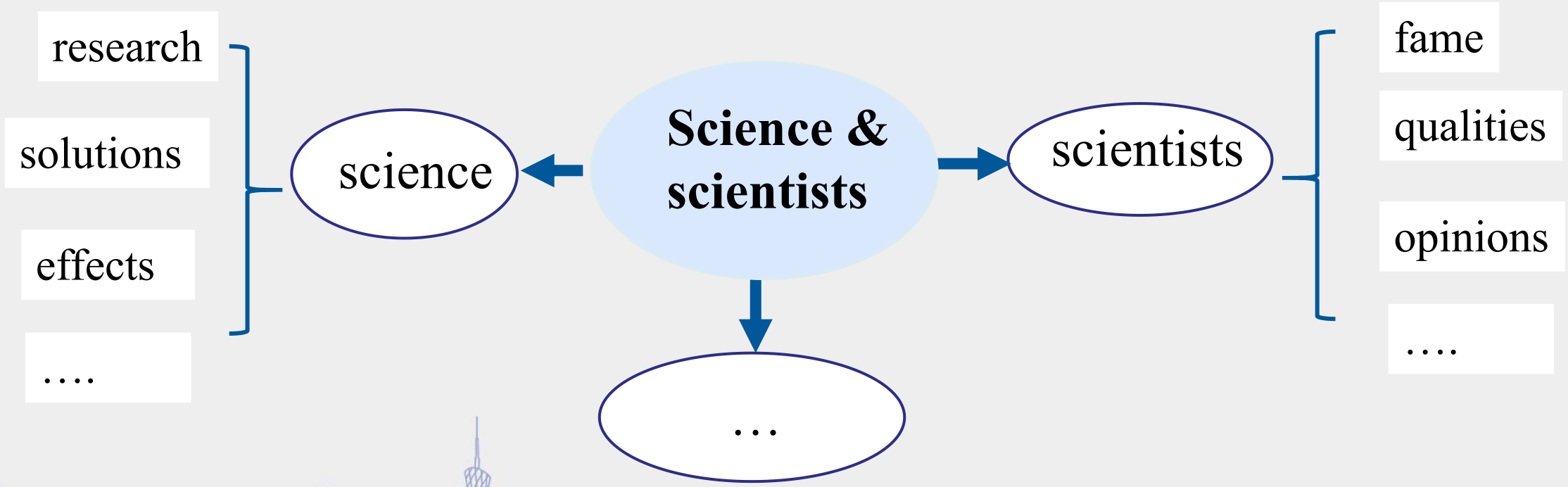
characteristics

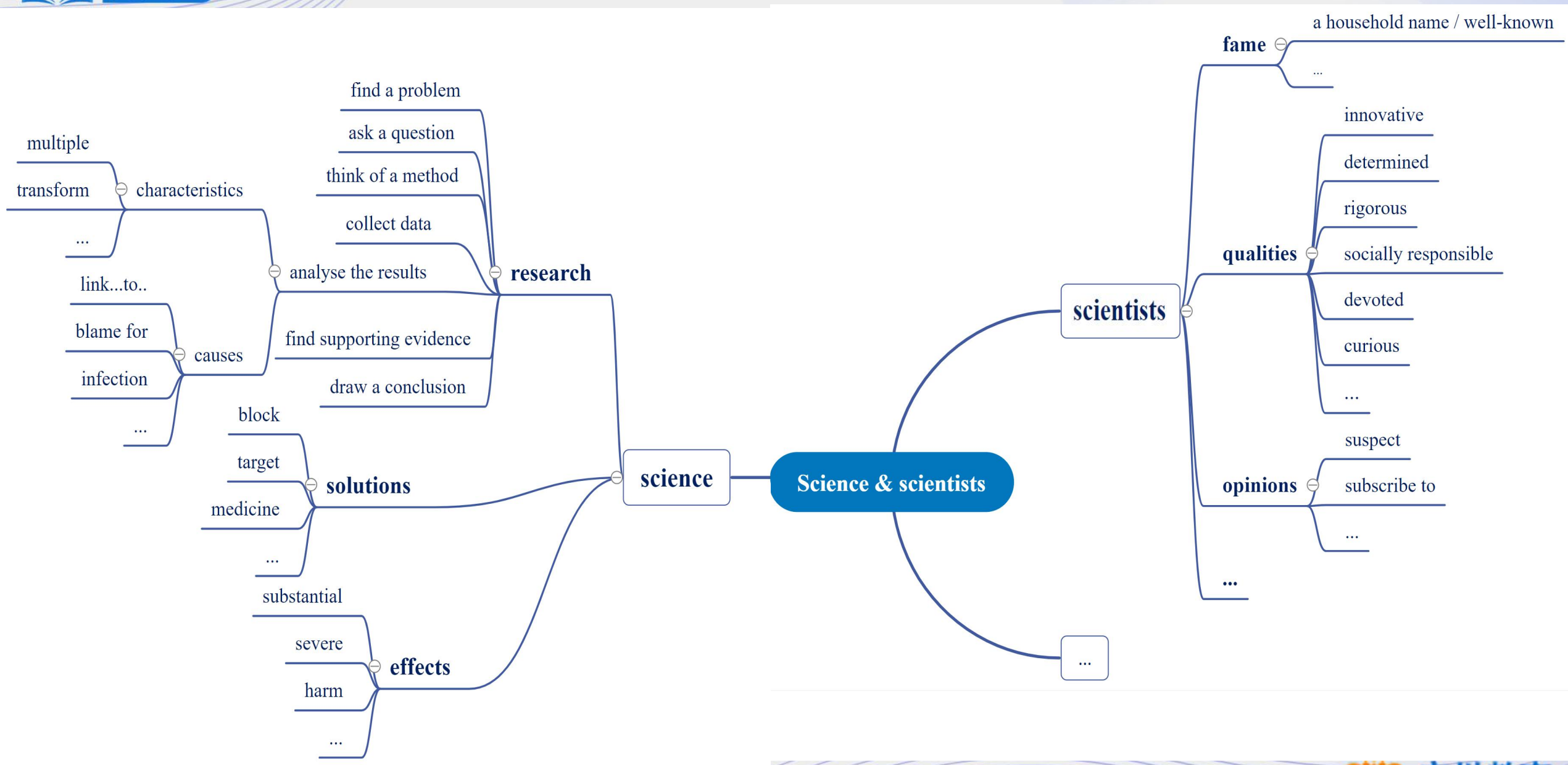
solution and effects

Tip 3: group key words and expressions in a topic-related mind map.



Task: Draw a mind map of the words and expressions in this lesson related to science and scientists (if you want, you can add more you learnt in this unit) .




Science & scientists
science
research
find a problem
ask a question
think of a method
collect data
analyse the results
find supporting evidence
draw a conclusion
characteristics
multiple
transform
...
causes
link...to..
blame for
infection
...
solutions
block
target
medicine
...
effects
substantial
severe
harm
...
scientists
fame
a household name / well-known
...
qualities
innovative
determined
rigorous
socially responsible
devoted
curious
...
opinions
suspect
subscribe to
...
...
...

Summary

1. analyse the qualities of John Snow as a scientist;
2. learn some important words and expressions about science and scientists;
3. master some skills of learning words and expressions.

- learn words in collocations.
- understand the meanings of words through their synonyms.
- group key words and expressions in a topic-related mind map.

Homework

1. Expand your mind map as you learn more words and expressions in this unit.

2. Finish Ex. 1 & 3 on P.61 in your textbook.

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Thank you for listening!

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The longest English word

to an extreme degree 非常

of viewing or observing 观察或注意的

mountain that releases lava and ash 火山的

a state of disease

prefix 前缀

pneumonoultramicroscopicsilicovolcanoconiosis

suffix 后缀

of lung 肺的

small

of silicon 硅的

of dust

/ˌnjuːmə(ʊ)nəʊˌʌltrəˌmaɪkrə (ʊ)ˈskɒpɪkˌsɪlɪkəʊvɒlˌkeɪnəʊˌkəʊnɪˈəʊsɪs/

a lung disease caused by inhaling very fine ash and sand dust

尘肺病

TB P.4 Ex.1 Find the words from the previous pages with the following prefixes or suffixes. Then add two words for each prefix or suffix, and explain their meanings.

Prefix	Words	Prefix	Words	Suffix	Words	Suffix	Words
re-		micro-		-ory		-ial	
dis-		trans-		-ion		-ology	

re + unite (v. 联合) →
reunite (v.) – **to unite again 再联合；重逢**

Prefix	Meaning	Examples	Change
re-	again; back	reunite, review, restart, return, recall	meaning
dis-	not	discover, disappear, dislike, disable	
micro-	small	microscope, microwave, microphone	
trans-	complete change; through, across	transform, transplant, transport	

contradict (**v.** 反驳；相矛盾) + ory → contradictory (**adj.** 相矛盾的；对立的)

Suffix	Meaning	Examples	change
-ory	of or relating to	contradictory, advisory, compulsory	part of speech (词性)
-ion	action or process	infection, contribution, collection, reaction	
-ial	having the characteristics of	substantial, financial, official, commercial	
-ology	a branch of knowledge	epidemiology, biology, physiology	

Tip 4. understand the meanings and parts of speech of words according to prefix(es) and suffix(es).

Use the proper prefix or suffix with the words given in brackets to complete the sentences below.

1. To keep the Earth clean, we should recycle (cycle) plastics.
2. She managed to transform (form) people's negative attitudes towards her job into positive ones with her determination and devotion (devote).
3. Scientists around the globe are working to discover (cover) a cure for serious heart disease.
4. John Snow is very influential (influence) in defeating cholera because with his tireless efforts, Europe saw a substantial (substance) decrease in the number of deaths .

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Thank you for listening!

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