4.6 A Brave Heart Dedicated to Science And Humanity

Warming up!

Chit-Chat

1. Have you ever participated in or visited a science exhibition?
2. Did you observe/learn any new things there? What are those?
3. Scientists have to work very hard and make many sacrifices for years, to achieve success in their experiments. Why?
4. What is the difference between a discovery and an invention?

1. Discuss in pairs/groups about the precautions one has to take while working in a science laboratory. Write them in the form of Dos and Don'ts.

Dos	Don'ts
• Handle test tubes and other glass apparatus with care.	• Don't touch chemicals with bare hands.
•	• .....
•	• .....
•	• .....

2. Study the underlined Predicate in each of the sentences below and note the difference.

   1. I <u>met Debbie</u>. (verb (met) + Noun (Debbie)

      We <u>study Grammar</u>. (verb (study) + Noun (Grammar)

      (The object answers WHAT? or WHO? when asked to the verb.)

   2. He <u>became tired</u>. (verb (became) + Complement (tired)

      They <u>are hungry</u>. (verb (are) + complement (hungry)

      The verbs (became/are) incomplete without the words that follow (tired/hungry.) So 'tired' and 'hungry' are Complements of the verbs 'became' and 'are'.)

   3. She <u>spoke softly</u>.

      They <u>live here</u>.

      He <u>turned early</u>.

      (The verbs in the Predicates are followed by Adverbials since they indicate How?/Where/When the action in the verb takes place.)

   Now say whether the Predicate in the following sentences contain Object or Complement or Adverbial after the verb.

   (a) He looked upwards. .....
   (b) My brother is injured. .....
   (c) We scored a goal. .....
   (d) We beat the opponents. .....
   (d) She answered perfectly. .....
   (e) The guests arrived early. .....
   (f) I shall be happy. .....
   (g) You wrote the address. .....

A Brave Heart Dedicated to Science And Humanity

The history of men's progress from the darkness of ignorance to the glorious light of knowledge and enlightenment is full of chapters that tell of extraordinary men and women. These men and women worked with great courage, **commitment**, dedication and singleness of purpose in their effort to attain what seemed to be **unattainable**. These men and women were driven in their effort to uncover the truth and mystery of the universe with an **indomitable** spirit which characterises the human spirit. And this is the spirit that drove Columbus and Vasco de Gama to sail to the unknown seas, Robert Peary to race to the Pole, Sir Ronald Ross to fight against malaria, Hillary and Tenzing to reach the top of Everest, and Armstrong and his team to go to the moon.

One great woman who dedicated her life to the cause of science and to the welfare of humanity is Madame Curie, the discoverer of radium. The mere statement that Madame Curie discovered the radium will never tell the true story of the extraordinary courage, determination and singleness of purpose that this noble woman showed in the face of extreme poverty, pain and suffering that comes along with such condition.

Born Maria Sklodowska in Warsaw, Poland on November, 7 1867, Marie Curie's childhood dream was to study science in Paris, but her father could not afford the expense for this. So Maria took a job as a **governess** and saved a little money. With that little money she finally went to Sorbonne, the University of Paris, to study science. Her father could send her only a small amount and her life in the university was a **disheartening** experience in poverty and hunger. She lived only on bread, butter and tea, and she often fainted for lack of food. In spite of all this she pursued her studies **indomitably** and she

- **commitment :** firm decision to do something
- **unattainable :** impossible to achieve
- **indomitable :** unbeatable

✦ What qualities do great achievers possess?

✦ What information do you get about Marie's early life?

- **governess :** a resident care-taker for children
- **disheartening :** discouraging
- **indomitably :** with a very strong will, undefeatedly.

topped her class with Honours in Physics and Mathematics.

It was at the university that she met a Frenchman, Pierre Curie, a brilliant but poor scientist. Then they together began to work in a shabby laboratory. Soon, their friendship turned into love and in less than a year, in July, 1895, they were married. The couple then took a flat in Paris with **scarcely** any furniture in it except their books, a lamp, a white wooden table and two chairs.

- **scarcely :** hardly

After the birth of a daughter, Irene, the next year, Marie and Pierre set up a laboratory in a wooden shed near their flat, It had a leaky skylight and an earthen floor. Here Marie, after her daily household work, settled down to study.

✦ What are the signs of poverty suffered by the young couple?

Marie was specially interested in a substance called uranium which was obtained from **pitchblende**, a black, very hard and very expensive substance. Uranium was known to give off very powerful rays by which men could see through many substances. Now Marie discovered that what was left after obtaining uranium was even more powerful. Later on, Pierre and Marie found that there was not one, but two new substances giving off these rays although they had not yet been able to obtain either of them. They called one of them Polonium, in honour of her country. Poland and the other was called Radium. Radium is the most powerful of the radio-active elements. And radio-active elements can give off rays which can **penetrate** substances that are **opaque** to light. There was another French scientist called Henri Becquerel, who in 1896 had discovered that uranium possessed this property. But Polonium and Radium possessed radio-active in much higher degree.

- **pitchblende :** a form of mineral uraninite occuring in brown or black pitch-like masses containing radium

- **penetrate :** go through
- **opaque :** not transparent, not able to see through

✦ Why were the two new substances named Polonium and Radium?

The Curies now began to work with greater enthusiasm, but they were poor and pitchblende itself was an extremely expensive substance, which they could not afford to buy in large quantity. They, however, sacrificed all the luxuries of life to save

money to buy whatever little amount of pitchblende they could. They lived in utter **penury**, not buying costly food and warm clothes for the extremely cold Parisian winter. Often they could not sleep during the cold nights due to lack of warmth. Overwork seriously affected Madame Curie's health. Often she was forced to leave the laboratory to take a much needed rest. Her husband begged her to give up the struggle, but she **resolutely** refused. Marie was driven by a mad determination to discover the mystery of radium. With courage she faced all the miseries of a life of poverty and carried on with her research along with her husband who loved and supported her.

- **penury :** extreme poverty

✦ What proves Marie's will power?

- **resolutely :** with great determination

Luck, however, favoured the Curies and a **windfall** came to them. It was a gift of a ton of pitchblende from the emperor of Austria, who was an admirer of the Curies. It was the most precious gift the Curies had received and in their shabby laboratory they toiled along, boiled and burnt, overpowered by heat in summer and frozen with cold in winter.

- **windfall :** unexpected luck

✦ Which gift did she receive from the emperor of Austria? Why was it the most precious for them?

The Curies continued their work for four more years. Wearing an acid stained, dust covered mask, Marie toiled along stirring large pots of pitchblende ensuring that the fires beneath were active throughout the day and the night. Then in 1902, success finally came. On a September night the Curies, after a day's tiresome work, went home. Then just as they were about to go to bed they went to the laboratory to have another look at the hundreds of small bowls into which they had poured filtered pitchblende. In the dark laboratory as they moved cautiously forward there were all around them rays of soft, bluish purple light coming from the small, glass covered bowls. Radium had been discovered ! Marie said to her husband, 'Do you remember the day when you told me that you wanted radium to have a beautiful colour? Look …. look!"

✦ Describe how the Curies first sighted Radium? What was its colour?

Actually, what they had produced was just a tiny pinch of white powder that looked like salt. But

- **incalculable :** not capable of being measured

✦ How is radium used in the medical field?

✦ **Discuss in groups:** 'Courage is undefeatable.'

- **disconsolate :** very depressed

✦ How did Pierre meet with an early death?

✦ What makes Marie Curie an exceptional scientist?

- **compulsive:** passionate/ uncontrollable
- **endurance :** tolerance
- **hostile :** adverse, bitter

it was to become one of the wonders of the world. With its rays people would be able to see through the hardest of substances except lead.

The benefits of radium in the world of medicine are **incalculable**. It has been used with great effect in the treatment of cancer. The bacteria of such diseases as typhus, cholera and anthrax can also be killed by radium.

In 1903 the Curies along with Henry Becquesel, were awarded the Nobel Prize for physics for the discovery of Radium and Polonium. They wished, they could have patented their discovery and become rich, but this noble woman refused to do so and gave it free to the world to be used properly.

In 1906, Pierre was knocked down and killed by a horse-drawn wagon. Marie clung to his lifeless body and remained **disconsolate**.

In 1911, Marie was awarded the Nobel prize for the second time and this was for Chemistry. Madame Curie remained comparatively poor and when asked why she did not make money by her discoveries, she replied, ''I am working for science. Radium belongs to the people, not to me.''

In 1934, the health of Marie Curie failed and in the July of that year this great scientist, who had given her life for the cause of science and humanity, died. In every great man and woman there is a **compulsive** desire to discover the truth. Madame Curie, who pursued her life's goal with great courage, **endurance**, dedication and strength of character, is a living example of this statement.

There are also men and women who show extreme courage when they are face to face with great danger. But greater is the courage of men and women who display a strength of mind that is not defeated by extremely **hostile** and unfavourable conditions of life. Madame Curie certainly belongs to this latter group.

ENGLISH WORKSHOP

1. Write in one sentence each, why the following years were landmarks in the lives of Pierre and Marie Curie.

1895 .....

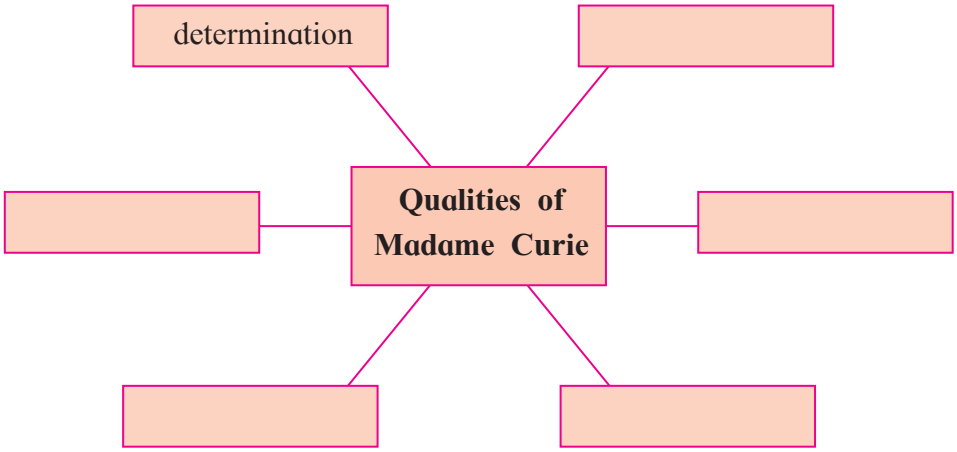
1902 .....

1903 .....

1906 .....

1911 .....

2. Complete the web diagram with the qualities of Madame Curie.



3. Name the following.

(a) Two discoverers of new lands

1. .....

2. .....

(b) Two conquerers of the peak of Mt. Everest

1. .....

2. .....

(c) Original name of Madame Curie

.....

(d) Her place of birth

.....

(e) Subjects Marie majored in, at the University of Paris

.....

(f) Nationality of her husband Pierre

.....

(g) Scientist who discovered the properties of uranium

.....

(h) Two radio-active elements discovered by Curies

.....

4. Read the text carefully and match the incidents occured in Madam Curie's life given in table A with the years in table B.

Table A	Table B
1. Henri Becquerel discovered that uranium had the property where radio-active elements can give off rays which can penetrate substances that are opaque to light.	1902
2. Maria Sklodowska was born in Warsaw, Poland.	1934
3. Marie was awarded Nobel Prize.	1896
4. Curie couple discovered radium.	1867
5. Marie passed away.	1911

5. Think and answer in your own words.

(a) What common characteristics did Marie and Pierre share, as students?

(b) Which of the two scientists was greater than the other? Say why?

(c) Why was the gift of a ton pitchblende, a great stroke of luck, to the Curies?

(d) Besides the uses of radium and polonium mentioned in the text, in what other way, do you think, it is used in the field of medicine?

(e) What proves that Marrie Curie was a true lover of humanity and not a wealth?

6. Find words/phrases from the text that are synonyms of the word 'brave'.

7. Read and understand the following words. Find out/search for proverbs/thoughts/quotes/slogans that are related to each of them.

(a) Courage .....

.....

(b) Strength of character .....

.....

(c) Determination .....

.....

(d) Hard-work .....

.....

8. Match the branches of Science with what fields they study :

(A)	(B)
(a) Ecology	(i) Study of Atmosphere
(b) Geology	(ii) Study of Plant-life
(c) Meteorology	(iii) Study of the Universe
(d) Anatomy	(iv) Study of living organisms and environment
(e) Botany	(v) Study of human mind and emotions
(f) Psychology	(vi) Study of structure and functions of the body
(g) Cosmology	(vii) Study of solid earth and rocks

(a) ..... (b) ..... (c) ..... (d) ..... (e) ..... (f) ..... (g) .....

9. Imagine that your school needs some Scientific equipments, apparatus and formulae charts for the laboratory. Being the in-charge of Science Committee, write a letter to the Headmaster of your school suggesting him some Scientific equipments and apparatus required for Standard X Science practicals. Take help of the information given below to complete your letter.

Sanjay Sharma
In-charge of Science Committee,
New English High School, Akola
1 January, 2018

To
The Headmaster,
.....
.....

Sub : .....
Sir/Madam,

- various experiments included in Standard X syllabus
- purpose of your requirements
- equipments, apparatus etc.
- quality and quantity
- benefits and utility
- add your own points

Thank you,

Yours obediently,
.....
.....

10. 'There is no short-cut to success'.

Expand this maxim with a suitable introduction, body with examples and conclusion. Write it in your notebook in about 20 lines.

11. Project :

The life and work and inventions of Marie Curie are given in detail in the text. Go to your library or search on internet at least five famous scientists who have given great inventions to the world and write about them or prepare a chart showing the information about them.

Language Study

1. Pick out the Prefixes and Suffixes from the following words and find the root word :

Word	Prefix	Suffix	Root Word
1. unattainable			
2. indomitable			
3. disheartening			
4. incalculable			
5. disconsolate			
6. ensuring			

2. (A) Say whether the Predicates in the sentences below contain Objects/ Complements/Adverbials.

(a) Madame Curie discovered radium.

(b) Pierre was knocked down.

(c) Pitchblende was expensive.

(d) The couple took a flat.

(e) They moved cautiously, success came finally.

(B) Pick out the Conjunctions in the following sentences and say whether they are Subordinators or Co-ordinators.

(a) There are women who show extreme courage.

(b) Pitchblende was an extremely expensive substance, so they could not afford to buy.

(c) After her daily household work Marie settled down to study.

(d) Marie wanted to study in Paris but her father could not afford it.

(e) History is full of chapters that tell of extraordinary people!

BLDPE6

Live English!

What is Blogging?

The term blog is short for web log. It is an online public diary which lists each diary entry in reverse order so that new diary entries are placed on the top of the page, and older entries are placed below. Each entry is called a post.

Who Blogs?

Anyone can create a blog, if they have a basic understanding of the way the software works. There are privately owned blogs on individual webpages, which require a little knowledge about creating webpages, but there are also blog creation services which allow you to quickly and easily set up your own blog. You can add posts as often as you like, and can say almost anything that you want. Blogs are created for a lot of different reasons, and by many different people.

What Are Blogs About?

There are many topics that a blog may contain, depending on who is updating it and why. Many blogs provide news or comment in response to a particular subject, like local news, politics or even hobbies. Food blogs are popular for people who want to share recipes, and many political activists and writers have blogs which are used to respond to current political topics. Many blogs also function as personal online diaries.

Blog Classification

A blog is usually textual, based on news and commentary, although there are other types of blogs which are gaining popularity. Artlogs are blogs which focus on art, Photoblogs focus on photography, Sketch-blogs focus on sketching, and so on. There are also a few specialised types of blogs, including Vblogging or video blogging, and Podcasting or audio blogging.

Creating a Blog on the Internet

If you have a good understanding of webpage design and development, you may be able to create your own blog on a personal website. Otherwise, your best option is to choose a website that does the setting up for you, so that all you have to do is join, customise a little and begin to write. There are many blog websites like www.livejournal.com, www.wordpress.com, www.blogger.com or www.blogs.myspace.com which will allow you to quickly and easily create your own blog. They also give you the option to set controls so that you can choose to allow only friends or only yourself to read them.

Blog Popularity

Blogs are becoming more and more popular for many reasons. This is because they offer a wealth of information on a lot of different topics. They also drive traffic

to websites by attracting new visitors with interesting blog column commentary. Blogs are a great tool because they allow anyone to express themselves on the Internet. If you are looking for a way to express yourself online, or to share information regarding a favourite subject of yours, beginning your own blog may be the best option for you because everyone has an opinion on the Internet, and soon everyone will have their own personal weblog too.

Now with the help of your teacher create your own Blog on one of the following given topics.

1. Your experiences and recently celebrated birthday party.
2. Your expectations from the school.
3. Describe the surroundings of your residence.
4. Describe a cultural programme / campaign / project conducted at your school.

✓ Dos

1. Model good behaviour
2. Promote your innovative and good work
3. Post stories, pictures or videos that are bound to make people think
4. Use it to motivate others and interact with them
5. Be active but don't overdo it
6. Make sure your message is clear and brief
7. Make sure all of your sharing is valid
8. Understand which social media platforms are best for your expressions
9. Take care of privacy settings as well as your passwords
10. Use common sense as to what you share. Your post becomes a representation of your personality
11. Know the pros and cons of various chat messengers
12. Rely on secure web portals
13. Nurture existing relationships and develop new ones by sharing useful content
14. Avoid poor grammar and spelling mistakes
15. Think before tagging, posting and sharing anything; 'Is it true?', 'Is it pleasant?', 'Is it useful?'

...

✗ Don'ts

1. Don't be fake
2. Don't let it become your dumping ground
3. Don't post so often that you overwhelm or annoy people
4. Don't like your own post
5. Don't share too much information
6. Don't be spammy
7. Don't forget about privacy settings
8. Don't ignore others' comments
9. Don't delete negative comments
10. Don't post constantly. It has a negative effect that can lead to quick unfollows
11. Don't write in ALL CAPS
12. Don't share the exact same message again and again
13. Don't use abusive language for anyone
14. Don't get engrossed in any social media
15. Don't waste your valuable time only in chatting or posting

...