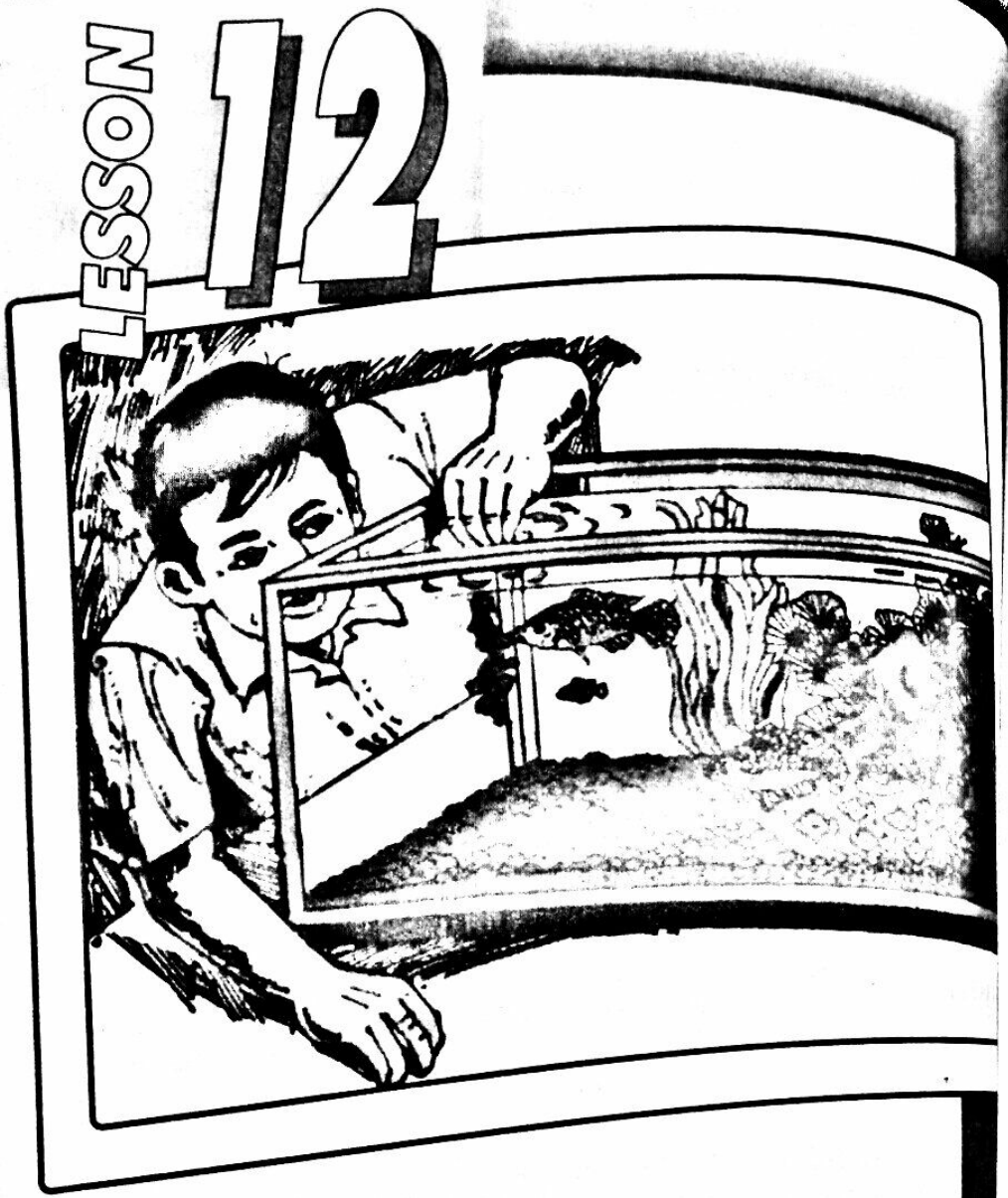
LESSON 12



The Jewel Fish

The Jewel Fish

(From *King Solomon's Ring* by Konrad Z. Lorenz
as translated by Marjorie Kerr Wilson)

The iridescent, brilliant blue spots in the red darkness of the dorsal fin play a special role when the female jewel fish is putting her babies to bed. She jerks her fin rapidly up and down, making the jewels flash like a heliograph. At this, the young congregate under the mother and obediently descend into the nesting hole. The father, in the meantime, searches the whole tank for stragglers. He does not coax them along but simply inhales them into his roomy mouth, swims to the nest, and blows them into the hollow. The baby sinks at once heavily to the bottom and remains lying there. By an ingenious arrangement of reflexes, the swim-bladders of young "sleeping" cichlids contract so strongly that the tiny fish become much heavier than water and remain, like little stones, lying in the hollow, just as they did in their earliest childhood before their swim-bladder was filled with gas. The same reaction of "becoming heavy" is also elicited when a parent fish takes a young one in its mouth. Without this reflex mechanism it would be impossible for the father, when he gathers up his children in the evening, to keep them together.

I once saw a jewel fish, during such an evening transport of strayed children, perform a deed which absolutely astonished me. I came, late one evening, into the laboratory. It was already dusk and I wished hurriedly to feed a few fish which had not received anything to eat that day; amongst them was a pair of jewel fish who were tending their young. As I approached the container, I saw that most of the young were already in the nesting hollow over which the mother was hovering. She refused to come for the food when I threw pieces of earthworm into the tank. The father, however, who in great excitement, was dashing backwards and forwards searching for truants, allowed himself to be diverted from his duty by a nice hind end of earthworm (for some unknown reason this end is preferred by all worm-eaters to the front one). He swam up and seized the worm, but, owing to its size, was unable to swallow it. As he was in the act of chewing this mouthful, he saw a baby fish swimming by itself across the tank; he started as though stung, raced after the baby and took it into his already filled mouth. It was a thrilling moment. The fish had in its mouth two different things of which one must go into the stomach and the other into the nest. What would he do? I must confess that, at that moment, I would not have given two pence for the life of that tiny jewel fish. But wonderful what really happened! The fish stood stock still with full cheeks, but did not chew. If ever I have seen a fish think, it was at that moment! What a truly

remarkable thing that a fish can find itself in a genuine conflicting situation and, in this case, behave exactly as a human being would; that is to say, it stops, blocked in all directions, and can go neither forward nor backward. For many seconds the father jewel fish stood riveted and one could almost see how his feelings were working. Then he solved the conflict in a way for which one was bound to feel admiration: he spat out the whole contents of his mouth: the worm fell to the bottom, and the little jewel fish, becoming heavy in the way described above, did the same. Then the father turned resolutely to the worm and ate it up, without haste but all the time with one eye on the child which "obediently" lay on the bottom beneath him. When he had finished, he inhaled the baby and carried it home to its mother. Some students, who had witnessed the whole scene, started as one man to applaud.

A Meaning in context

1. Pick out words from the passage which mean the following.

(a) back (*para* 1)
(b) gather (*para* 1)
(c) strays or loiterers (*para* 1)
(d) persuade (*para* 1)
(e) capacious (*para* 1)
(f) cleverly contrived (*para* 1)
(g) response (*para* 1)
(h) evoked or drawn out (*para* 1)
(i) conveyance (*para* 2)
(j) distracted (*para* 2)
(k) admit (*para* 2)
(l) noteworthy or exceptional (*para* 2)
(m) engrossed (*para* 2)
(n) obliged or forced (*para* 2)
(o) determinedly (*para* 2)
(p) clap in approval (*para* 3)

2. Choose the best synonym for each word as it is used in the passage.

(a) brilliant (*l.* 1)
A sparkling B glorious C talented D showy

(b) obediently (*l.* 4)
A willingly B quietly C dutifully D loyally

(c) perform (*l.* 18)
A act B do C fulfil D function

(d) wished (*l.* 19)
A aspired B wanted C cursed D greeted

(e) refused (*l.* 23)
A repulsed B withheld C denied D declined

(f) thrilling (*l.* 32)
A exciting B moving C vibrating D awesome

(g) genuine (*l.* 38)
A natural B real C sincere D unadulterated

(h) exactly (*l.* 39)
A precisely B correctly C properly D definitely

(i) admiration (*l.* 43)
A satisfaction B pleasure C respect D surprise

(j) scene (*l.* 49)
A view B place C act D incident

B In each case, choose the best answer.

1. Young jewel fish know it is time for bed
A when they see their mother hovering over the nesting hole.
B when they see their mother changing colour as she swims.
C when they see the blue spots on their mother's dorsal fin flashing in signal.
D when they see their father dashing about the tank in search of them.

2. When their swim-bladders contract, young jewel fish
A begin to feel sleepy.
B increase in weight.
C become hard like little stones.
D lose buoyancy.

3. What was the father jewel fish doing when the writer dropped food into the tank?
A He was hovering over the nesting hole with the mother fish.
B He was swimming about looking for stray baby fish.
C He was pursuing a baby fish across the tank.
D He was waiting to be fed.

4. Which stage in the incident described in Paragraph 2 did the writer find "thrilling"?
A It was when the father fish was distracted from looking for stray baby fish by a bit of food.
B It was when the father fish caught sight of a baby fish as he was chewing the food.
C It was when the father fish dashed after the baby fish with the food still in his mouth.

D It was when the father fish caught the baby fish in his already filled mouth.

5. How did the father fish solve the conflict that faced him?
   A He expelled the baby fish and ate the worm.
   B He expelled the worm but retained the baby fish.
   C He expelled the baby fish and the worm from his mouth.
   D He kept the worm and the baby fish in his mouth.

C Answer these questions in your own words.

1. How does the mother jewel fish signal to her babies that it is time for bed? What do they do when they see the signal?

2. Explain how the reflex mechanism of a young cichlid works. Why would it be impossible for the father fish to keep his children together if they had no such mechanism?

3. Besides the division of labour in getting their young to bed, how did the mother fish differ from the father fish? Base your answer on the passage and give a good reason for it.

4. In what way was the situation in which the father fish found himself conflicting?

5. Why was the way the father fish solved the conflict admirable?

6. With regard to the conflicting situation the father fish found himself in, the writer confesses that "at that moment, I would not have given two-pence for the life of that tiny jewel fish". What does he mean by that? How much faith would you have in what he says if the life of a human child were involved? Why?

7. Break up the incident into different stages. At each stage, what did the writer and the other witnesses feel? How did they give expression to their feelings at the end?

8. Why are the words "sleeping" (*l.* 10), "becoming heavy" (*l.* 13) and "obediently" (*l.* 47) placed within quotation marks in the passage? Give a reason for each.

a quality family life

One of the easiest ways to empower children is to listen to them. If children feel important and share small things with their parents, they feel comfortable sharing their more significant things with them later in life. Listening to each other in a family improves the quality of family life and everyone feels cherished.

The best time for a family to listen to each other is during meals. Turn off the television and talk. This is a time you can create memories that will become anchors of love to see your children through difficult times.

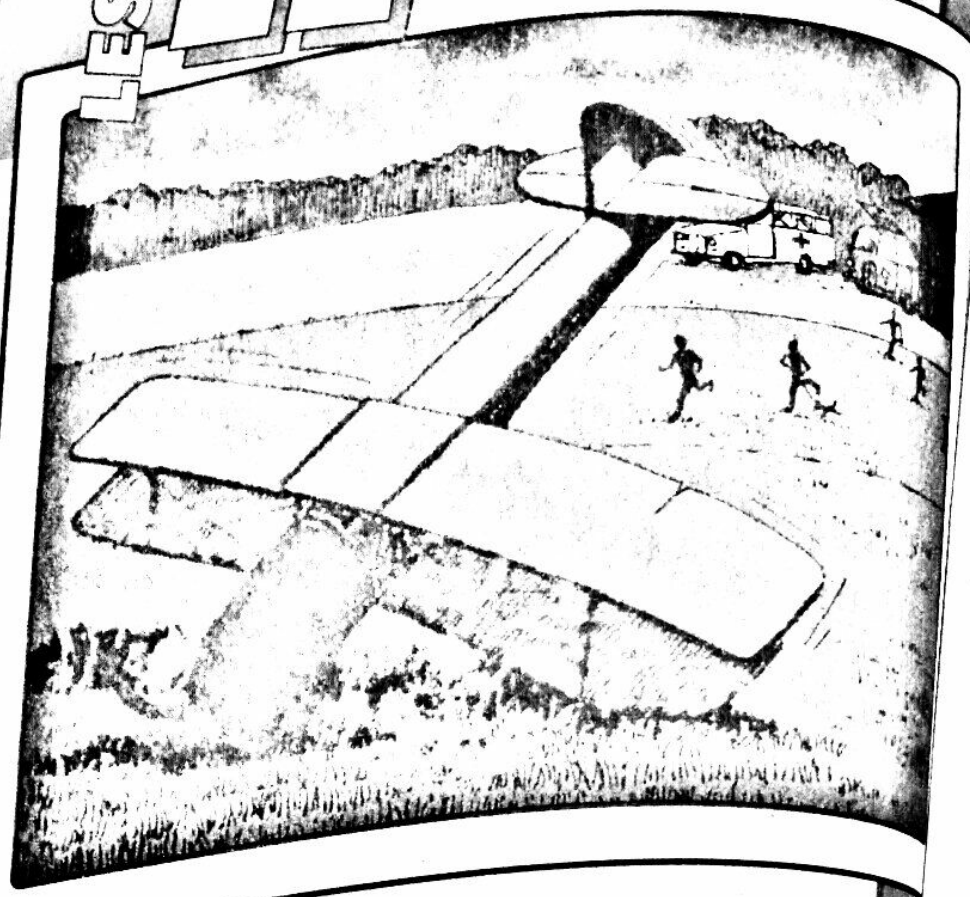
Interaction and communication among siblings can deeply affect their feelings of self-esteem. It helps them in developing social skills that will carry them through the rest of their lives. Listening among siblings teaches them how to comfort and sympathise with another person. All the social and interaction skills children learn with, and from, their siblings are used later in life.

"Listening With The Heart" by Dr Shahida Mohiuddin
The Review weekly of Dawn, January 24-30, 2002

SPEAK OUT

It is important for family members to interact and talk frequently. Write about a typical evening when you and your family get together and share views. What do you usually talk about?

LESSON 22



A Crash

A Crash

(From *A Rabbit in the Air*, by David Garnett)

On Thursday I was gossiping on the aerodrome after lunch when a cry went up, and the medical officer on duty, to whom I had been talking, dashed off leaving me his dog to hold.

A crash — but where? I peered in all directions, but soon heard that the damaged machine was still in the air. The pilot, practising landing on a mark, had smashed his undercarriage and had taken off again at once. When he came round next time he found the ambulance and the fire-engine had been rushed out into conspicuous positions, and that the ground officer was waving him on; so he flew off to consider it. As he passed by, six metres above the ground, I saw the undercarriage wobbling like a loose tooth. The pilot's feelings when he realized the significance of the fire-engine I know nothing of, but on the ground our feelings were acute. Every man in the camp, every scullion and cook, fitter and rigger, appeared suddenly on the aerodrome, and nothing could have made any one of us turn our heads away.

The dog strained at his leash, and I stood motionless and paralysed. I suppose that mixture of disgust, curiosity and fear was the emotion called dread. But whatever was its name it was unwholesome and ignoble — a revelation of indecency. The dog strained and jumped at his leash, throttling himself to join his master, and I stood straining my eyes, watching and waiting to see men burn.

Lie down, you brute! The office clerks of the aerodrome had joined the cooks and scullions. The amphitheatre was packed. The show was free.

Meanwhile, the pilot had climbed up to 2 000 metres or so to think things out and we had lost sight of him. And while they were making up their minds I held the dog and exorcized the indecency of waiting by making up my mind. What should I do? I did not remember that the Air Force all wear parachutes, or the problem would have been solved. I should without hesitation have joined the caterpillar club. But not knowing of the parachutes, my decision was to fly off to the sea-shore and alight in the sea where it was about one metre deep. One might turn upside down and drown, but one wouldn't burn. But presently the machine came gliding down silently from a great height, and on the aerodrome we became aware that this machine was the one for which we were all waiting. Emotion grew intense, saliva flowed in some mouths, while others' throats were parched and dry. And over the trees floated the machine inexorably while we twitched and the infernal dog whined and pulled. What a lovely show glide! My God, the machine had touched the earth and was running forward. But when it had gone ten metres, it skidded and, as we stared, it reared up slowly on its nose. Have you

watched and listened while the last cracks tear through the heartwood and the vast tree shivers and plunges slowly to its doom?

Just so slowly the machine balanced, plunged and went over on to its back, shivered and lay still. It did not catch fire. Neither of the occupants was seriously hurt, and a quarter of an hour after the ambulance and the fire-engine had raced up to the wreckage, the pilot went up again in another machine.

A Meaning in context

1. A **scullion** assists a cook and does the rough work in the kitchen. What does each of the following people do for a living?
   (a) medical officer
   (b) ground officer
   (c) fitter
   (d) rigger

2. Give the meaning of each word as it is used in the passage.
   (a) undercarriage (*l.* 6)
   (b) conspicuous (*l.* 8)
   (c) wobbling (*l.* 10)
   (d) paralysed (*l.* 15)
   (e) revelation (*l.* 18)
   (f) indecency (*l.* 18)
   (g) amphitheatre (*l.* 22)
   (h) exorcized (*l.* 25)
   (i) hesitation (*l.* 27)
   (j) inexorably (*l.* 35)
   (k) infernal (*l.* 35)
   (l) skidded (*l.* 38)
   (m) heartwood (*l.* 39)
   (n) wreckage (*l.* 44)

3. Give a synonym for each word and make sentences with both words.

EXAMPLE
dashed (*l.* 2) — rushed
He **dashed** past me without any sign of recognition.
We **rushed** out to see the procession when we heard trumpets blaring.

   (a) realized (*l.* 11)
   (b) acute (*l.* 12)
   (c) motionless (*l.* 15)
   (d) mixture (*l.* 16)
   (e) disgust (*l.* 16)
   (f) emotion (*l.* 16)
   (g) unwholesome (*l.* 17)
   (h) ignoble (*l.* 17)
   (i) throttling (*l.* 18)
   (j) doom (*l.* 40)

B In each case, choose the best answer.

1. What made the medical officer dash off while talking to the writer?
   A He heard the alert of an impending crash.
   B He heard that a damaged plane was coming in to land.
   C He heard that a plane crash had happened.
   D He heard the pilot of the damaged plane calling for help.

2. Instead of landing the second time he came round, the pilot of the damaged aircraft flew off because
   A he had lost his courage.
   B the ground officer was waving him on.
   C he wanted to think how to land the plane safely.
   D he realized the significance of the fire-engine on the aerodrome.

3. How did the writer feel as he stood watching and waiting on the aerodrome?
   A He was curious about, and fearful of, the outcome of the incident.
   B He was disgusted with his morbid interest in the incident.
   C He was angry with the dog for wanting to go to its master.
   D He experienced all the above feelings.

4. What did the writer decide he would do if he were in the same situation as the pilot of the damaged aircraft?
   A He would bale out of the plane and come down by parachute.
   B He would fly the plane to the sea-shore and come down in a shallow part of the sea.
   C He would fly the plane to a great height and glide down from there.
   D He would leave everything to fate and hope for the best.

5. Which statement is true?
   A The pilot damaged the plane the first time he tried to land it.
   B The pilot smashed the undercarriage of the plane even more the second time he came round.
   C The pilot drove the plane into some trees the third time he came round.
   D In his last attempt to land, the pilot lost control of the plane and it hit the ground nose on.

6. Which statement is false?
   A After touching ground, the plane ran for ten metres before it skidded.
   B As the plane skidded, its rear end slowly rose.
   C The plane stood on its nose for a little while before it crashed into a tree.
   D The plane went over on its back but did not catch fire.

C Answer these questions in your own words.

1. Why did the medical officer leave his dog with the writer when he rushed off?

2. What was the significance of the fire-engine and the ambulance on the aerodrome? What do you think the pilot's feelings would be if he realized it?

3. What does "amphitheatre" refer to in the passage? Why does the writer draw the analogy? Give all the reasons you can infer from the passage.

4. How did the writer "exorcize the indecency of waiting"?

5. What does the writer liken the distressed plane to? Describe how the machine ended a complete wreck.

6. What can you infer about the character of the pilot from the passage? Try to substantiate your answer.

LESSON 4

Four Years in a Shed

Four Years in a Shed

(From *Madame Curie*, by Eve Curie)

To show polonium and radium to the incredulous, to prove to the world the existence of their "children", and to complete their own conviction, Pierre and Marie Curie were now to labour for four years.

During the first year they busied themselves with the chemical separation of radium and polonium and they studied the radiation of the products, more and more active, thus obtained. Before long they considered it more practical to separate their efforts. Pierre Curie tried to determine the properties of radium, and to know the new metal better. Marie continued those chemical treatments which would permit her to obtain salts of pure radium. In this division of labour Marie had chosen the "man's job". She accomplished the toil of a day labourer. Inside the shed her husband was absorbed by delicate experiments. In the courtyard, dressed in her old dust-covered and acid-stained smock, her hair blown by the wind, surrounded by smoke which stung her eyes and throat, Marie was a sort of factory all by herself.

The days of work became months and years: Pierre and Marie were not discouraged. This material which resisted them, which defended its secrets, fascinated them. United by their tenderness, united by their intellectual passions, they had, in a wooden shack, the "anti-natural" existence for which they had both been made, she as well as he.

Marie continued to treat, kilogramme by kilogramme, the tonnes of pitchblende residue which were sent her on several occasions from St. Joachimsthal. With her terrible patience, she was able to be, every day for four years, a physicist, a chemis , a specialized worker, an engineer and a labouring man all at once. Thanks to her brain and muscle, the old tables in the shed held more and more concentrated products — products more and more rich in radium. Marie Curie was approaching the end: she no longer stood in the courtyard, enveloped in bitter smoke, to watch the heavy basins of material in fusion. She was now at the stage of purification and of the "fractional crystallization" of strongly radioactive solutions. But the poverty of her haphazard equipment hindered her work more than ever. It was now that she needed a spotlessly clean work-room and apparatus perfectly protected against cold, heat and dirt. In this shed, open to every wind, iron and coal dust was afloat which, to Marie's despair, mixed itself into the products purified with so much care. Her heart sometimes constricted before these little daily accidents, which took so much of her time and her strength.

Pierre was so tired of the interminable struggle that he would have been quite ready to abandon it. Of course, he did not dream of dropping the study of radium and of radioactivity. But he would willingly have renounced, for the time being, the special operation of preparing pure radium. The obstacles seemed insurmountable. Could they not resume this work later on, under better conditions? More attached to the meaning of natural phenomena than to their material reality, Pierre Curie was exasperated to see the paltry results to which Marie's exhausting effort had led. He advised an armistice.

He counted without his wife's character. Marie wanted to isolate radium and she would isolate it. She scorned fatigue and difficulties, and even the gaps in her own knowledge which complicated her task. After all, she was only a very young scientist: she still had not the certainty and great culture Pierre had acquired by twenty years' work, and sometimes she stumbled across phenomena or methods of calculation of which she knew very little, and for which she had to make hasty studies. So much the worse! With stubborn eyes under her great brow, she clung to her apparatus and her test-tubes.

In 1902, forty-five months after the day on which the Curies announced the probable existence of radium, Marie finally carried off the victory in this war of attrition: she succeeded in preparing a decigramme of pure radium, and made a first determination of the atomic weight of the new substance, which was 225. The incredulous chemists — of whom there were still a few — could only bow before the facts, before the superhuman obstinacy of a woman. Radium officially existed.

A Meaning in context

1. Explain each expression as it is used in the passage.

(a) the incredulous (*l.* 1)
(b) conviction (*l.* 2)
(c) determine (*l.* 7)
(d) division of labour (*l.* 10)
(e) accomplished (*ll.* 10,11)
(f) absorbed (*l.* 12)
(g) resisted (*l.* 17)
(h) defended its secrets (*l.* 17)
(i) terrible (*l.* 23)
(j) brain and muscle (*l.* 25)
(k) in fusion (*l.* 29)
(l) poverty (*l.* 31)
(m) haphazard equipment (*l.* 31)
(n) constricted (*ll.* 35, 36)
(o) interminable struggle (*l.* 38)
(p) renounced (*ll.* 40, 41)
(q) insurmountable (*l.* 42)
(r) exasperated (*l.* 44)
(s) paltry (*l.* 45)
(t) isolate (*l.* 47)
(u) scorned (*l.* 48)
(v) stumbled across (*ll.* 51, 52)
(w) make hasty studies (*l.* 53)
(x) So much the worse! (*l.* 53)

2. Give the meaning of each sentence in your own words.

(a) Marie was a sort of factory all by herself.
(b) Pierre and Marie Curie were united by their tenderness and by their intellectual passions.
(c) Pierre Curie was more attached to the meaning of natural phenomena than to their material reality.
(d) He counted without his wife's character.
(e) Marie had not the certainty and great culture Pierre had acquired by twenty years' work.
(f) With stubborn eyes under her great brow, she clung to her apparatus and her test-tubes.
(g) Marie finally carried off the victory in this war of attrition.
(h) Radium officially existed.

B In each case, choose the best answer.

1. In the context of the passage, the "children" of Pierre and Marie Curie are
   A the incredulous.
   B polonium and radium.
   C the unborn.
   D their adopted children.

2. Pierre and Marie Curie decided to separate their efforts because
   A they differed in their interests.
   B some of the work could not be done by a woman.
   C they could not agree with each other.
   D it was more practical for them to work on different parts of the project.

3. "Marie had chosen the 'man's job'." This means that her part of the work
   A was physically more taxing.
   B required greater mental ability.
   C involved outdoor activity.
   D was that of a factory hand.

4. From information given in the fourth paragraph we can conclude that Pierre and Marie Curie were
   A anxious for fame.
   B determined and persistent individuals.
   C unnatural people.
   D eccentric.

5. What quality did Marie Curie show most in her work with radium?
   A It was intelligence.
   B It was strength.
   C It was patience.
   D It was tolerance.

6. What hindered Marie Curie in her efforts to arrive at a pure sample of radium?
   A It was the wind.
   B It was iron and coal dust.
   C It was lack of time and her own failing strength.
   D It was inadequate equipment and poor working conditions.

7. Pick out the false statement. In their study of radium and of radioactivity
   A Marie persisted through all difficulties.
   B Pierre wished they could work under better conditions.
   C Pierre sometimes felt discouraged by the obstacles they faced.
   D Pierre reached a point when he wanted to give up their work or pursuit altogether.

8. "He advised an armistice." (*ll.* 45, 46) In the context of the passage "an armistice" is
   A a suspension of effort.
   B a peace move.
   C a withdrawal.
   D a compromise.

9. There is evidence in the passage to show that Pierre was
   A not as intelligent as Marie.
   B more committed to their work than Marie.
   C a more experienced scientist than Marie.
   D not as observant a scientist as Marie.

10. "The victory" in line 57 refers specifically to
   A the Curies' discovery of radium.
   B Marie Curie's success in isolating radium.
   C Marie Curie's accomplishment of what was considered a "man's job".
   D Marie Curie's triumph over her unbelieving critics.

C Answer these questions in your own words.

1. For what reasons did Pierre and Marie Curie labour for four years in a shed?
2. When did they decide to "separate their efforts" in their study of radium and of radioactivity? Describe how this division of labour was carried out.
3. Make a list of the obstacles they faced in their work. How was each affected by these obstacles?
4. What do you learn about the characters of Pierre and Marie Curie from this passage? What sustained or helped them in their work?

D For further work and discussion

1. For your own information and general knowledge find out more about
   (a) polonium and radium. What are they used for?
   (b) radiation and radioactivity. How is radiation harmful to man? How can it be used to benefit man?
2. Marie Curie received two Nobel prizes for achievement in science: the first for physics, which she shared with her husband and another scientist; the second for chemistry. Who established the Nobel prizes? Where are they awarded? Besides physics and chemistry, for what areas of human interest and knowledge are they awarded?