JAF03 Lesson 10 Predicting

I. Discuss in pairs:

1. What do you think your life will be like in 10, 25, 50 years?
2. What do you think will be the main events in science in 10, 25 or 50 years?

II. **Predicting probability**

If something *always* occurs, then it *will certainly* occur.
If something *nearly always* occurs, then it will *almost certainly* occur.
Usually – will probably
Often – may well
Sometimes – may/will possibly
Occasionally – might
Rarely/ seldom – probably will not
Never – certainly will not

Alternative ways of predicting possibility:

<table>
<tr><td rowspan="8">It is extremely/ fairly</td><td>certain</td><td rowspan="4">that X will occur.</td><td>100%</td></tr>
<tr><td>probable</td><td rowspan="5">50%</td></tr>
<tr><td>likely</td></tr>
<tr><td>possible</td></tr>
<tr><td>improbable</td><td rowspan="3">that X will occur.</td></tr>
<tr><td>unlikely</td></tr>
<tr><td>certain</td><td>that X will not occur.</td><td>0%</td></tr>
</table>

There is a/an	extremely fairly	strong high weak low remote no	possibility that X will happen.

	The possibility probability likelihood	that X will happen is	extremely fairly	high/strong. low/ weak.

Using the structures for predicting probability, talk about a student of physics:
E.g. A student of physics might have a telescope in his/her bedroom.

III. Reading – Read this passage and find predictions.

The World Turns

The Earth is round; the fifteenth- and sixteenth-century explorers like Columbus and Magellan proved it. But there were ancient Greeks who had known this two thousand years earlier. They saw ships descend over the horizon and observed the curved shadow of the earth on the moon during a lunar eclipse. Then, in 200 B.C., the Greek astronomer Eratosthenes noted that at noon on the first day of summer, when the sun was at its highest, its rays shone to the bottom of a vertical well in Seyne, Egypt. Yet, on the same day in Alexandria, five hundred miles to the north, it was reported that a vertical post cast a shadow. If the earth had been flap, the post could not have cast a shadow at noon.

The earth spins, or rotates on its axis, once every twenty-four hours, causing us to have day and night. At any given time, the side of the earth facing the sun will have daylight, and the side turned away from the sun will have night. Although the earth is spinning at a speed of over one thousand miles an hour, we do not feel the movement or wind because everything around us, including the atmosphere, is moving at the same speed. The effect is similar to riding in an airplane. The air moves with you. If you light a match on an airplane, no wind will blow it out.

The earth also revolves around the sun once every year. This yearly revolution, plus the tilting of the earth on its axis, causes the seasons. When the sun´s rays are nearly overhead (*not* when the earth is closest to the sun) and the days are long, great amounts of the sun´s radiation are absorbed and the weather is hot. For example, from April through September, the North Pole tilts towards the sun and the northern hemisphere experiences summer while the southern hemisphere has winter. Then the North Pole tilts away from the sun and the seasons are reversed. On March 23 and September 21, the North Pole is not leaning toward or away from the sun. If you travelled around the earth on these two dates, you would find the days and nights equal every place you went.

(adapted from Bates, M.; Dudley-Evans, T. *Nucleus English for Science and Technology.* Longman, 1990)

Which of the predictions you have found is probable, hypothetical and impossible?

1. **A probable prediction:** This prediction will come true if certain conditions are met.
2. **A hypothetical prediction:** This prediction will also come true if certain conditions are met, but it may or may not come true.
3. **An impossible prediction:** Here, the prediction cannot be fulfilled because the condition is impossible, i.e. it is based on a past action.

Now, formulate the sentence patterns for predictions below.

1. **A probable prediction:** *If + present tense, ……*
2. **A hypothetical prediction:**
3. **An impossible prediction:**

Write all three types of predictions for the following:

a) **active voice:** Study hard – pass the exam

b) passive voice: Eclipse hidden – photos ruined

III. Grammar practice

1. Complete the sentences by filling in the proper form of the verb in parentheses:

a) Plants will not grow if they _____ (be) deficient in nitrogen.
b) Many lives would have been saved if scientists _____ (predict) the tornado.
c) A satellite will go into orbit when it _____ (reach) a speed of 18,000 miles per hour.
d) The calcium would melt if you _____ (heat) it to 845°C.
e) When winter comes, the bears _____ (hibernate).
f) If the iron bar were exposed to air, it _____(rust).
g) If the compound had been acid, it _____(turn) the litmus paper red.

(Zimmerman, F. *English for Science.* Prentice Hall Regents, 1989)

2. Create predictions in any logical or imaginative way:

a) If I didn´t use English grammar correctly, _____ .
b) If I could go anywhere in the world, _____ .
c) I would be happier, _____ .
d) Had I known what my studies at university would involve, _____ .
e) If I could see God and I ask one question, _____ .

IV. Predicting results of an experiment

Read the description of the experiment below and note down your predictions.

1. Hang a 1m length of a string to a fixed point. Tie a weight to the end. Pull the string back to the release point (a 45°angle) and time how long it takes to swing forward and back 5 times. Add a second weight and repeat. Make sure the release point is the same.
2. Shorten the string to 2/3 of its original length. Pull the string back to 45°. Release and time how long it takes for 5 swings. Shorten the string again to 1/3 of its original length and repeat. Make sure the weight and release angle are the same.

(Armer, T. *Cambridge English for Scientists.* Cambridge University Press, 2011.)

V. Video: Prophets of Science Fiction

Before you watch

Check the vocabulary: *wormhole – to warp - shortcut – elapse – eventually – cascade – ripple effect*

How would you finish the sentences below?

1. If you take an astronaut and put him in a rocket ship, …
2. As the astronaut orbits the Earth and comes back, he's actually a fraction of a second younger than he ...
3. If it were possible to go backwards in time, …

Watch the video and compare your answers with the ones in the footage.

http://science.discovery.com/videos/prophets-of-science-fiction-time-travel.html

After you watch:

1. How do you understand the claim that one type of time travel is already possible nowadays?
2. Explain the butterfly effect.
3. Explain the grandfather paradox.