Science Festival 2009-2010
Sharing in Morning Assembly (4-2-2010)

A&B: Good morning. We are from Science promotion team.

A: I'm **Ken**.

B: I'm **Keith**.

A: Today, we are here to share with you some common science knowledge.

B: Yesterday, our teammates have already shared about "The Fastest Animals". So, what do you want to talk about today?

A: Um… Let's talk about wind formation. Do you know how does wind form?

B: Well. I know that there are three forces that cause the wind to blow. They are the Pressure Gradient Force (氣壓梯度力), the Coriolis Force (地轉偏向力 / 科里奧利力) and Friction (摩擦力).

A: That's right. The Pressure Gradient Force (PGF) arises due to differences in pressure within the atmosphere. The PGF causes air to flow from high pressure to low pressure. In the absence of any other forces, wind would blow directly from high to low pressure.

B: The PGF also affects the speed of the wind. As the PGF becomes stronger, this means the pressure changing rapidly with distance, the wind speed increases. The Coriolis Force is a complicated force that affects the wind. The Coriolis Force is due to the earth's rotation. This force causes moving objects (i.e. air, planes, birds, etc) to deflect to the right of their motion in the Northern Hemisphere and to the left in the Southern Hemisphere. The Coriolis Force is strongest near the poles and zero at the equator.

A: The third force acting on the wind is friction. Friction becomes very important near the earth's surface because the surface of the earth is rough. Friction is the force that causes air to slow down and spiral into lows and out of highs. When air spirals into the low, it is converging into the low. When air converges near the surface, it is forced to rise. As air rises, it may condense and form clouds and precipitation. This is why low pressure systems are often associated with adverse weather conditions.

B: Conversely, high pressure systems are generally associated with fair weather. When air spirals out of the high, it is actually diverging. As air diverges from the high, the air above the surface must sink in order to replace the air that is moving away from the high. Sinking air warms and tends to evaporate any clouds that may be present.

A: That's the reasons why we feel wind blows.

B: Hey **Ken**. Do you know that the first round of 過關斬將 has already held successfully yesterday?

A: Of course! I also know that the final of the game will be held today in the school hall in school assembly. The result of the 1st round was posted on the Science Promotion Team notice board. There are 8 groups of F.3, 2 groups of F.4 and 1 group of F.6 students entered the final competition. I can't wait to see this exciting game.

B: Hope all teachers and students will enjoy the competition this afternoon. Thank you.