

Human Breathing Mechanism

An activity or two needs to be done before the final IC

Teacher and students share responsibility

Maximum student responsibility

IC

SS, in pairs, write a temporal explanation of the human breathing mechanism

SC

T introduces the genre, **temporal explanation**.

GC

T and SS work out the process of breathing mechanism using diagrams with arrows to show the flow.

And, as the visual is drawn, the T and SS co-construct what is going on and write it at the appropriate place in the visual. The SS draw on their worksheets what the teacher is drawing on the board.

MD

T explains the structure of a temporal explanation and its language features (eg present tense, orientations (and active/passive voice), nominalisation as orientation)

IC

SS in their small groups report their findings of the activity to the class .

SC

T explains the aims of the unit— understanding the human breathing mechanism.
T asks SS to recall prior knowledge of **air pressure & human respiratory system**.

GC

T asks SS to work in small groups and, as they take deep breaths, they:

- describe the movements of the rib cage and abdomen
- describe the feeling as the air is breathed in.

MD

T introduces key concepts involved in breathing, organized as cause and effect, thus ensuring students see some language patterns for expressing **cause and effect**.

Shared responsibility

IC

SS now use the technical terms and the cause & effect language patterns to explain the analogy of the breathing model.

SC

T asks SS what the similarities are between the model and the human breathing mechanism.

GC

T guides SS with questions to help students understand the change of the volume of the chest (*how*), the change in pressure inside the chest and the size of the lungs (*what*).

MD

T presents the full human breathing mechanism with the technical items.

Maximum teacher responsibility

IC

SS finish the activity, working out how to decrease the balloon size, and share their findings with the class.

SC and MD

T introduces the **breathing model** (bottle + balloon).

T introduces actions involving the changes of the bottle and balloon volume.

GC

Using the breathing model and emphasizing the cause and effect patterning, T guides the SS to relate the changes between the volumes of the bottle and the balloon, and the air pressure inside and outside of the bottle.

Release pressure from bottle sides
 > bottle size increases
 > pressure inside bottle drops
 > P_{in} higher than P_{out}
 > air in
 > balloon size increases