15. Blow Hot, Blow Cold

0529CH15

There was a woodcutter. Everyday in the morning he used to go to the forest to cut wood. In the evening he would sell the wood in the city. One day he went deep into the forest. It was a very cold winter. His fingers were becoming numb. Every now and then, the woodcutter would put down his axe and bring his hands close to his mouth. Then he would blow hard on them to warm them.

While he was cutting wood Mian Balishtiye was watching him from a corner. Mian Balishtiye saw that the woodcutter kept blowing on his hands. He began to wonder what all that was about! But he could not understand it. He got up thinking that he would go and ask the woodcutter. After walking a little, he came back thinking that the woodcutter may not like being asked. Finally, Mian Balishtiye could not help himself. He went hopping to the woodcutter and said, "Hello brother, if you don't mind can I ask you something?"

Seeing this tiny person the woodcutter was amazed and amused. But, he hid his smile and said, "Of course, of course, ask what you want to." "All I want to ask is why do you blow from your mouth on to your hands?" said Mian Balishtiye.

Teacher's Note : It would be good for the children to know that this story has been written by Dr. Zakir Hussain, former President of India. He has written many stories for children. It could be discussed why an imaginary character like *Mian Balishtiye* could have been used.

The woodcutter replied, "It is too cold. My hands are frozen, so I blow on them to warm them up a little. Then, when they get cold again I warm them again by blowing."

Mian Balishtiye nodded, "Oh, ho, so that's it!"

And with that he moved off. But he stayed nearby and kept a close watch on him.

Soon it was afternoon. The woodcutter began to think of lunch. He picked up two stones and made a *chulha*. He lit a fire and put a small *handi* (pot) filled with potatoes to boil. The wood was damp, so the woodcutter bent down and blew on the fire to help it burn. Balishtiye was watching him from a distance. "*Arre*", he said to himself, "There he goes again – blowing from his mouth! Does fire come out of his mouth?"

The woodcutter was feeling very hungry. He took out a potato from the *handi*. He tried to eat it but the potato was too hot. He again began to blow on it – 'foo, foo'.

"*Arre,*" said Balishtiye to himself, "He's blowing again! Now what? Is he going to burn the potato?" After blowing a few more 'foo, foos' on it, the woodcutter put it in his mouth and began to eat it.

Now Mian was very surprised! He just could not stop himself and off he went hopping to the woodcutter. "Hello brother", he said, "If you don't mind, can I ask you a question again?"

The woodcutter replied, "Not at all. Ask whatever you want."

Mian Balishtiye said, "This morning you told me that you blew on your hands to warm them up. Now you are blowing on this potato, which is already so hot. Why do you want to make it hotter?"

"No, no, my little friend. This potato is too hot. I am blowing on it to cool it down."

When he heard this, Mian Balishtiye's face became white. He began to tremble with fear, and started to back away.

The woodcutter was a good man. He said, "What's wrong Mian? Are you trembling because of the cold?"

But Mian Balishtiye kept going backwards. When he was a safe distance away, he said to himself, "What kind of a creature is this? Surely he must be a ghost or a djinn. Blow hot, blow cold with the same breath! It is just not possible!"

That's right there are some things which just cannot be – but they are!

– Zakir Hussain

Do this

Miya Balishtiye was confused when he saw the woodcutter blowing on his cold hands to make them warm and on the hot potatoes to cool them.

- Have you warmed your hands in winter by blowing on them when they are cold? How does it feel?
- Blow hard from your mouth onto your hands. How did you find the air from your mouth as compared to the air around? Was it hotter, or cooler?

- Now put your hands at some distance from your mouth, and blow again. Does the air from your mouth feel warm? Why?

Think and tell

Can you think of any other way in which you use the warmth from your breath?

- Fold a piece of cloth 3-4 times. Now bring it close to your mouth and blow hard on it. Did the cloth become warm?
- Balishtiye saw that the woodcutter was trying to cool the hot potatoes by blowing on them. What would have happened if he had eaten the potatoes without cooling them?
- Have you ever burnt your tongue when you ate or drank something that was too hot? How do you cool some food when it is too hot?
- If you were to cool these three hot things – *dal*, *roti*, rice – in which ways would you do so?

Picture 1

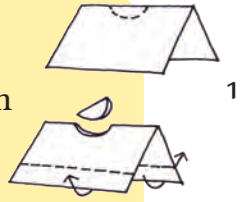
Mini tried to cool her tea by blowing on it. Which do you think will be hotter – Mini's tea or the air she blew from her mouth?

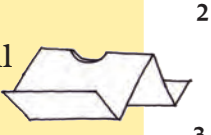
Picture 2

Sonu was feeling very cold. He kept blowing on to his hands. Now think and write, which will be cooler – Sonu's hands or his breath?

- For what other things do you blow air from your mouth?

Make a paper whistle



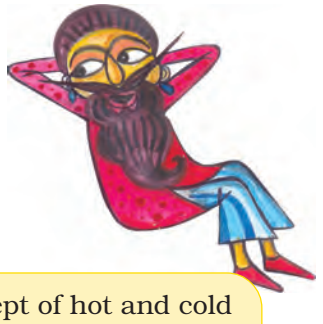


- Take a piece of paper 12 cm long and 6 cm wide.
- Fold the paper into half (as in picture 1).

  Tear it off a little in the centre to make a small hole (as shown in picture 2).
- From both the sides, fold the paper upwards (picture 3).
- Hold the paper between your fingers and put it to your mouth.
- Blow on it and hear the whistle. Whose whistle was louder - your's or your friend's?
- Blow gently and also blow hard and make different sounds.

Blow in different ways

- Make whistles of the things given below. Write in a sequence–from the loudest to the softest whistle.
  - Wrapper of a toffee _____
  - A leaf _____
  - A balloon _____
  - The cap of a pen _____
  - Any other thing _____



Teacher's Note : Children take time to understand the concept of hot and cold air. Through the activity, we can try to enable children to understand that the air coming out of our mouth can be cold or hot as compared to the temperature outside. It is not expected that children will be able to understand all this at one go. It is important to link this concept with different experiences of children.

- Have you seen people playing different musical instruments like *flute, dholak, been ...., guitar, mridang*, etc. Can you recognise their sounds with your eyes closed? Find out more about these musical instruments. Collect their pictures too.

Write

- Can you name some things which produce melodious or pleasing sounds when we blow into them.

Do this and discuss

- Have you seen someone blowing on their spectacles to wipe them clean? How does the air from the mouth help in cleaning the spectacles?
- Take a glass. Bring it near your mouth and blow hard on it. Do this two or three times. Does the glass look hazy?
- Can you make a mirror hazy in the same way? Can you tell by touching the mirror what made it hazy? Is the air you blew from your mouth dry or wet?
- Put your hand on your chest. When you breathe in, does your chest come out or go in.

Measure your chest

- Take a deep breath in
- Ask your friend to measure your chest with a thread. Measurement_____

Teacher's Note : Air blown out from our mouth is hot and the mirror cold. The hot air that we breathe out contains water vapour which turn into tiny droplets of water when it comes in contact with the colder mirror. This makes the glass moist and hazy.

– Now breathe out. Again ask your friend to measure your chest. Measurement_____

– Was there any difference in the two measurements of your chest?

How many breaths in one minute

– Put your finger under your nose. Can you feel any air when you breathe out from your nose?

– Count how many times in one minute do you breathe in and breathe out.

– Jump 30 times. Did you feel breathless?

– Now again count how many times in one minute you breathed in and out.

– What was the difference in your count before and after jumping.

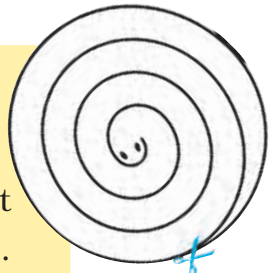
The clock inside you

You have all heard the 'tick tick' of the clock. Have you seen a doctor using a stethoscope to listen to our chest? What do you think she hears? Where is the sound coming from? Is there a clock inside your chest that keeps ticking away?

Do you want to listen to your heartbeat? Take a rubber tube as long as the distance from your shoulder to your elbow. At one end of the tube fix a funnel. Place the funnel on the left side of your chest. Put the other end of the tube to your ear. Listen carefully. Did you hear a *dhak dhak* sound?

Teacher's Note : To help children time one minute the teacher can say 'start' and 'stop' in the activity for counting breaths.

Snake tells the flow of air!



Picture 1

- For this take a round paper 10-15 cms wide. Cut this paper in a spiral shape (as shown in picture 1).
- To hold this snake tie a thread on both sides.
- Tie a knot or a button to make it hang. Now the snake is ready to move.
- Hang this snake near a hot thing. For this you can take hot tea, water or a burning candle. Now see from the top, in which direction the snake moves.

– Whenever the air flows upwards it will move in a clock-wise direction. When the air flows downwards the snake will move in the opposite direction.

– Stand with this snake below a fan. Look in which direction it moves. Take this paper snake to different places and observe its movement.

– Can you understand from the movement of the snake - if the air is moving upwards or downwards?

Picture 2

What we have learnt

- While playing, Amit hit a wall. His forehead was swollen. *Didi* immediately folded a scarf (4-5 times), blew on it and kept it on Amit's forehead. Why do you think *didi* did this?
- We blow to cool hot things as well as to warm them. Give examples of each.

Teacher's Note : The 'snake game' can give an idea to children about the direction of air flow. When the hot air rises the snake moves in a clockwise direction. When the cold air comes down (as it is heavier) the snake moves in an anti-clockwise direction as happens under a fan. To find out the direction in which the snake is moving we must remember to view it from above.