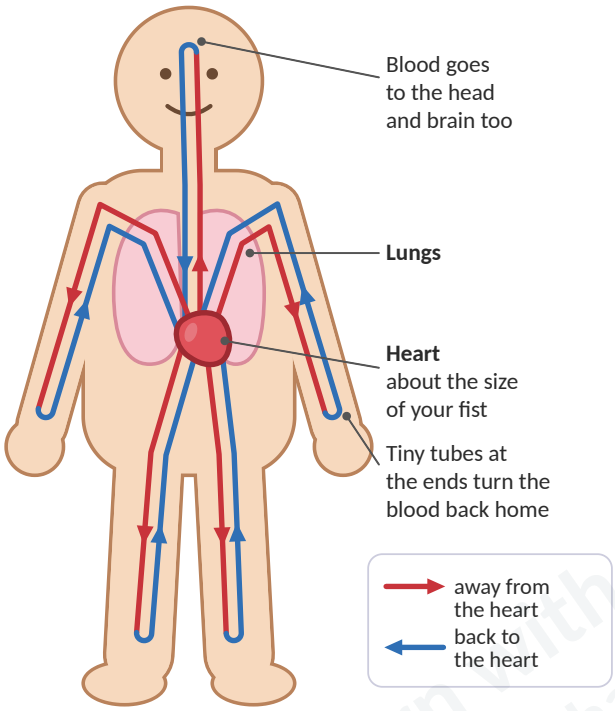
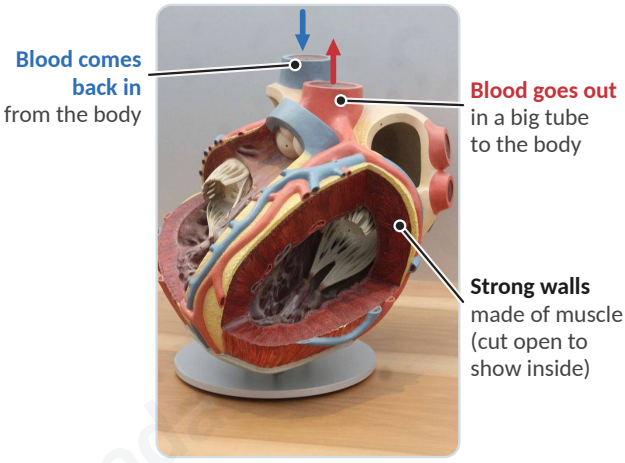
LEARN WITH AKSHADA · PICTURE LESSON

The heart and blood

Put your hand on your chest. Feel that thump? That is your heart, a busy pump that sends blood all round your body, day and night.



Blood leaves the heart and travels to the head, arms and legs, then comes back.



A closer look at the heart

For the parent *read in 1 minute*

The heart, the blood and the blood vessels work as one system. The **heart** pumps without stopping; the **blood vessels** carry blood out to every part of the body and back; the **blood** delivers oxygen (picked up in the lungs) and nutrients (from digested food), and carries waste away.

At Class II, aim for three things: where the heart is, what it does, and how to feel it working (the pulse). Red and blue in the pictures only show the direction: real blood is always red.

How to use these pages

- Read one step panel a day (pages 2 and 3). Let your child point to each part in the big picture on this page.
- Try the activities on page 4: counting the pulse and the skipping test work well together.
- Finish with the quick check on page 5. The answers are on page 6.

Talk about it *before turning the page · 5 minutes*

1. **Put your hand on your chest. What can you feel?**
   Listen for: a beat or thump; that is the heart pumping.
2. **Does your heart stop when you go to sleep?**
   Listen for: no; it keeps working all the time, just a little slower.
3. **After a race, why do you puff and feel your heart thumping?**
   Listen for: the muscles need more oxygen, so the heart pumps faster and you breathe faster.

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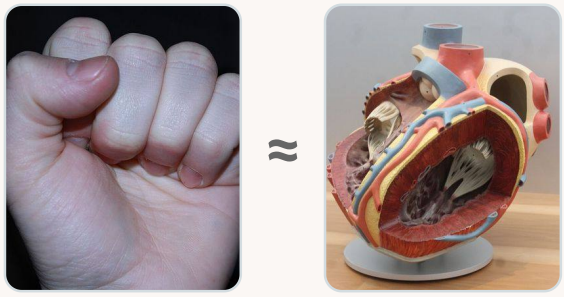
Step by step: your heart and blood

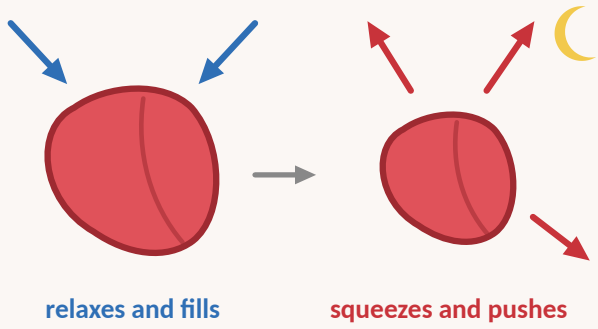
Read one panel at a time. Let your child look at the picture and guess before you read the words.



1 Meet your heart

Make a fist. Your heart is about that big! It sits in your chest, between your two lungs, a little to the left. Your ribs keep it safe, like a cage.

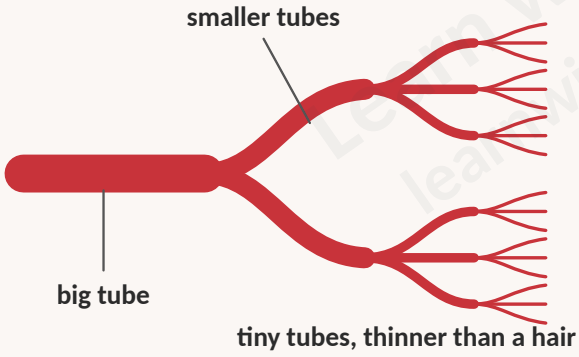
Remember: The heart is a strong muscle, about the size of your fist.



2 A pump that never stops

Your heart is a pump. It fills up with blood, then squeezes hard to push the blood out. Fill, squeeze, fill, squeeze… all day and all night, even when you are fast asleep.

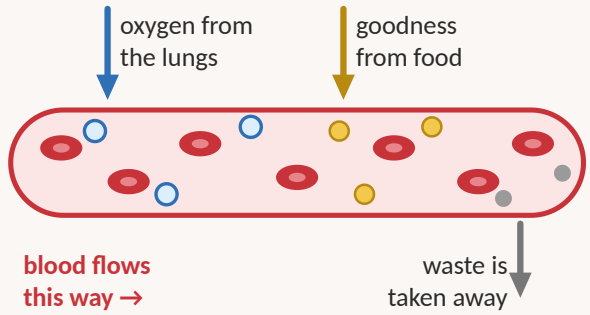
Remember: The heart pumps blood all the time. It never takes a holiday.



3 Tubes all round the body

Blood travels in tubes called **blood vessels**. Big tubes near the heart split into smaller and smaller ones, like a main road turning into tiny lanes. The tiniest tubes reach every part of you, even your toes.

Remember: Blood vessels carry blood from the heart all round the body and back again.



4 What does blood carry?

Blood is like a delivery van. It brings **oxygen** from your lungs and **goodness from your food** (your roti, dal and fruit) to every part of your body. It also picks up **waste** that your body does not need and takes it away.

Remember: Blood carries oxygen and food to the body, and takes waste away.

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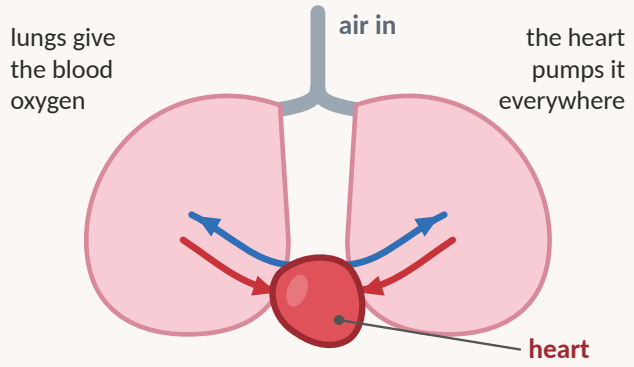
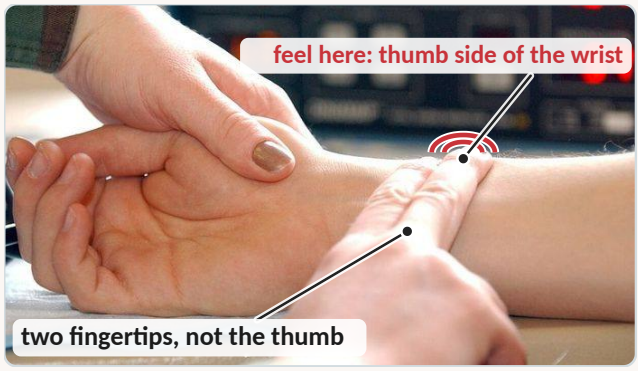
Step by step (continued)



5 Heart and lungs: a team

When you breathe in, your lungs fill with air. The heart sends blood to the lungs to pick up oxygen. The blood comes back to the heart, and the heart pumps it out to the whole body.

Remember: The lungs give the blood oxygen; the heart sends it everywhere.



6 Heartbeat and pulse

Each squeeze of your heart is one **heartbeat**. You can feel each push of blood as a **pulse** at your wrist or the side of your neck. Sitting quietly, a child's heart beats about **70 to 110 times a minute**. After running it beats much faster.

Remember: Your pulse shows your heartbeat. It speeds up when you run and play.



7 Keep your heart healthy

Your heart is a muscle, and muscles get stronger when you use them. Run, jump, dance, cycle and play outside every day. Eat dal, sabzi, fruit and roti, with fewer fried snacks and sweet drinks. Sleep well every night.

Remember: Active play, healthy food and good sleep keep your heart strong.

For curious minds

- **Arteries** carry blood **a**way from the heart. **Veins** bring it back to the heart. (Artery and away both start with "a".)
- Blood is always red. Coming back to the heart it is a darker red. Veins can look bluish through the skin, so pictures colour them blue.
- The heart has **four rooms** (chambers). The right side sends blood to the lungs; the left side sends it to the whole body.
- A child's heart beats more than **1,00,000 times** (one lakh) every day.

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Activities to try at home

1. Count your pulse

1. Sit quietly for a minute.
2. Put two fingertips (not your thumb) on the inside of your wrist, on the thumb side. Press gently until you feel tap, tap, tap.
3. A grown-up watches a clock for 1 minute while you count the taps. Too long? Count for 30 seconds and double it.
4. Now find the pulse gently at the side of your neck (one side only).

My pulse: _____ beats in 1 minute

2. Make a stethoscope

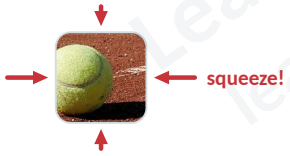
1. Use the cardboard tube from a kitchen roll, or roll a sheet of paper into a tube and tape it.
2. For a cup version, a grown-up cuts the bottom off a paper cup and fixes the tube to it. The cup end goes on the chest.
3. In a quiet room, hold one end on a grown-up's chest, a little to the left. Put your ear gently at the other end.
4. Listen for "lub-dub, lub-dub". That is the heart closing its doors (valves) as it pumps.

Safety: never shout or tap into the tube, and never push anything into an ear. Grown-ups use the scissors.

3. Squeeze a ball

Hold a tennis ball (or a soft rubber ball). Squeeze it hard, then let go. Do this once every second for one minute.

Is your hand tired? Squeezing hard like this is a bit like the work your heart does in one beat. Your heart does it all day and all night, and it keeps going without a rest.



4. Before and after skipping

Count your pulse for 1 minute sitting down. Skip, or jump on the spot, for 1 minute. Count again straight away. Rest for 3 minutes and count once more.

When	Beats in 1 minute
Sitting quietly	
Just after skipping	
After 3 minutes' rest	

Safety: clear space, a non-slippery floor; stop if you feel dizzy, and drink some water. If your child has asthma or a heart condition, follow the doctor's advice on exercise.

Key points to remember

- The **heart** is a strong muscle, about the size of your fist, in the chest between the lungs, a little to the left.
- It **pumps blood all the time**, even when you are asleep.
- **Blood vessels** are tubes, big and tiny, that carry blood all round the body and back to the heart.
- **Blood** carries oxygen from the lungs and goodness from food to every part of the body, and takes waste away.
- You can feel your heartbeat as a **pulse** at the wrist or neck. Play, healthy food and sleep keep the heart strong.

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Quick check

10 questions · answers on page 6

1. Your heart is about the size of:
   (a) a football (b) a pea (c) your fist (d) a pillow

2. Where is your heart?
   (a) in your tummy (b) in your chest, between the lungs (c) in your head (d) in your arm

3. True or false: your heart stops beating when you sleep.
   ☐ True ☐ False

4. True or false: blood vessels are tubes that carry blood all round the body.
   ☐ True ☐ False

5. Blood picks up oxygen in the:
   (a) stomach (b) bones (c) lungs (d) ears

6. **Put in order.** Write 1, 2, 3, 4 to show the journey of the blood. Start with the blood coming back to the heart.
   ___ The heart pumps the blood out to the whole body.
   ___ Blood comes back from the body to the heart.
   ___ The blood picks up oxygen in the lungs.
   ___ The heart sends the blood to the lungs.

7. Match each part to its job. Write the letter.

1. Heart ___	A. tubes that carry blood
2. Lungs ___	B. pumps blood
3. Blood vessels ___	C. carries oxygen and food to every part
4. Blood ___	D. give the blood oxygen

8. Name two places where you can feel your pulse.

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9. **Why** does your heart beat faster after you skip or run?

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10. **Odd one out:** which one does **not** help your heart? Playing outside, eating dal and fruit, sitting with a screen all day, sleeping well.

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Answers

1. (c) your fist. Make a fist to see how big your heart is.
2. (b) in your chest, between the lungs, a little to the left.
3. False. It keeps pumping all the time; it just beats a little slower when you sleep.
4. True. Big and tiny tubes take blood out from the heart and bring it back.
5. (c) lungs. Air comes into the lungs when you breathe in, and the blood picks up oxygen there.
6. 4, 1, 3, 2 (top to bottom). The blood comes back to the heart (1), the heart sends it to the lungs (2), it picks up oxygen there (3), and the heart pumps it out to the body (4).
7. 1-B, 2-D, 3-A, 4-C.
8. The wrist (thumb side) and the side of the neck.
9. Your busy muscles need more oxygen and food, so the heart pumps faster to send more blood to them.
10. Sitting with a screen all day. The heart is a muscle and gets stronger when you move.

Notes for the parent

- Resting pulse varies from child to child and from day to day. Roughly 70 to 110 beats a minute is common for a child of 7 sitting quietly; a fast pulse right after play is normal and settles with rest.
- Counting a pulse takes practice. If your child cannot find it at the wrist, try the neck, or let them listen with the paper-tube stethoscope instead.
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