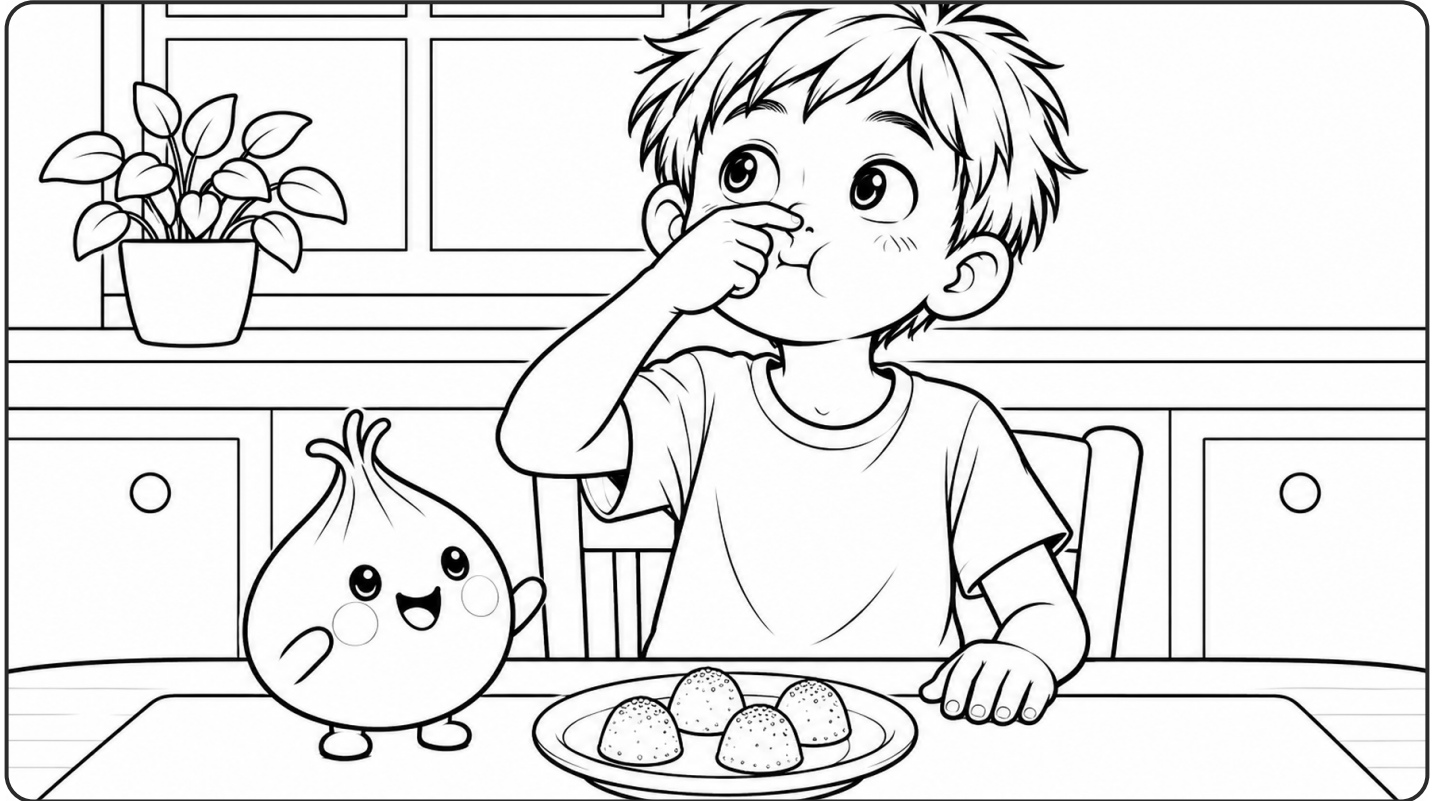


How do I taste different flavors?



Ice cream is sweet. A lemon is sour. A pretzel is salty. They all go into the same mouth. So how can I tell them apart?



Why?

1. Your tongue is covered with tiny bumps.

Thousands of taste buds hide inside them. They are too small to see.

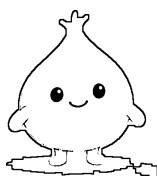
2. Each bit of food fits its own taster cell, like a key in a lock.

Your spit washes tiny bits of food down to the taste buds. Click! A quick message zips along a nerve to your brain.

3. Your nose helps too.

When you chew, the smell of your food floats up into your nose. Your brain mixes taste and smell together. That mix is called flavor.

Color Buddy too!



Try it! Hold your nose!

You need: one fruity candy

1. Hold your nose and pop a fruity candy in your mouth. Chew.
2. You can tell it is sweet. But which fruit is it?
3. Now let go of your nose. Surprise! There it is.

What happened? With your nose closed the smell can't reach your brain, so you only get the taste. That is also why food tastes plain when you have a cold.

Video + more questions:
whywhywhykids.com/taste



scan with a grown-up

What are bones for?



What is a skeleton, and what are all those bones inside you doing?



Why?

1. Job number one: holding you up!

Without bones, you would flop like a wiggly noodle. Your skeleton is like the frame of a house.

2. Job number two: keeping you safe.

Your skull is a hard helmet around your brain. And your ribs are like a cage that guards your heart and lungs.

3. Job number three: helping you move.

Your muscles hold on to your bones and pull them. Where two bones meet, there is a joint, so you can bend, twist, and wave.

Color Bonnie too!



Try it! Find your bones

You need: just your hands

1. Gently press your fingers along your arm and your knuckles.
2. Can you feel the hard bones under your skin?
3. Now bend your fingers. How many joints can you find in one finger?

What happened? A joint is where two bones meet. That is where your finger bends.

Video + more questions:
whywhywhykids.com/bones



scan with a grown-up

Why does sweat make you feel cool?



When you sweat a lot and then feel cool air, why does the sweaty part of you feel extra cool?



Why?

1. When you run and play, your body gets hot inside, like a little engine.

Too much heat is not good for you. So your skin turns on its own sprinklers! Millions of tiny holes called sweat glands push out little drops of water. That water is sweat.

2. The fastest water bits jump off your skin and fly away.

Sweat is made of teeny tiny water bits, much too small to see. Your warm skin makes them wiggle faster and faster. The fastest ones fly off into the air, and each one carries a little bit of your heat with it. This is called evaporation.

3. Whoosh! Cool air blows the crowd away.

When the air is still, the water bits that flew off hang around near your skin, like a big crowd, so your sweat dries slowly. A breeze sweeps them away and brings fresh, dry air. Now lots of water bits can jump off at once, and they take away lots of heat, very fast.

Try it! Blow on your hands

You need: a little water

1. Wet the back of one hand. Keep the other hand dry.
2. Now blow on both of them.
3. Which hand feels colder?

What happened? The wet one! The water flying away from the wet hand takes heat with it. That is double cooling.

Video + more questions:
whywhywhykids.com/sweat

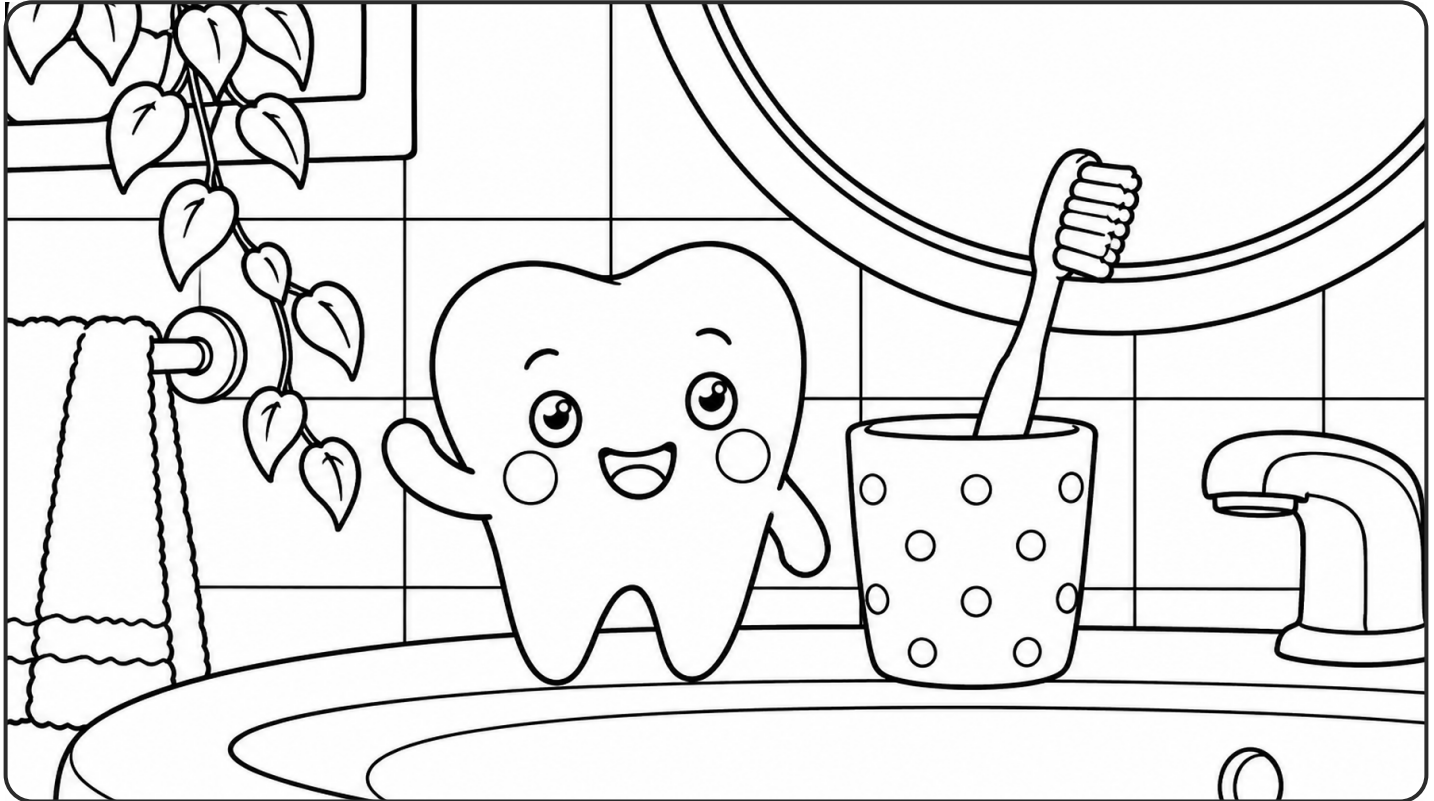


scan with a grown-up

Why do my baby teeth fall out?



One day, a tooth starts to wiggle. A little later, it falls right out! Why do baby teeth fall out?



Why?

1. Your jaw keeps growing, but a tooth can't grow bigger.

By about three, you had twenty small baby teeth, just right for a little mouth. But once a tooth is made, it stays the same size. So your body has a clever plan, a second set of teeth, bigger and stronger.

2. The grown-up teeth are already there, hiding inside your jaw.

They sit right under the baby teeth, growing slowly for years.

3. Tiny helpers take the baby tooth's root apart.

The root is the part you cannot see. It holds the tooth tight, like the roots of a tree. When a grown-up tooth is ready to move up, tiny helpers take the baby tooth's root apart, bit by bit. With less root to hold it, the tooth gets loose. Wiggle, wiggle!

Try it! Count your teeth

You need: a mirror and a grown-up

1. Look in a mirror, open wide, and count your teeth.
2. Can you find a wobbly one, a gap, or a new tooth coming in?
3. Ask a grown-up if you can count theirs. Who has more?

What happened? A wobbly tooth or a gap means a bigger, stronger tooth is getting ready to take its place.

Video + more questions:
whywhywhykids.com/teeth

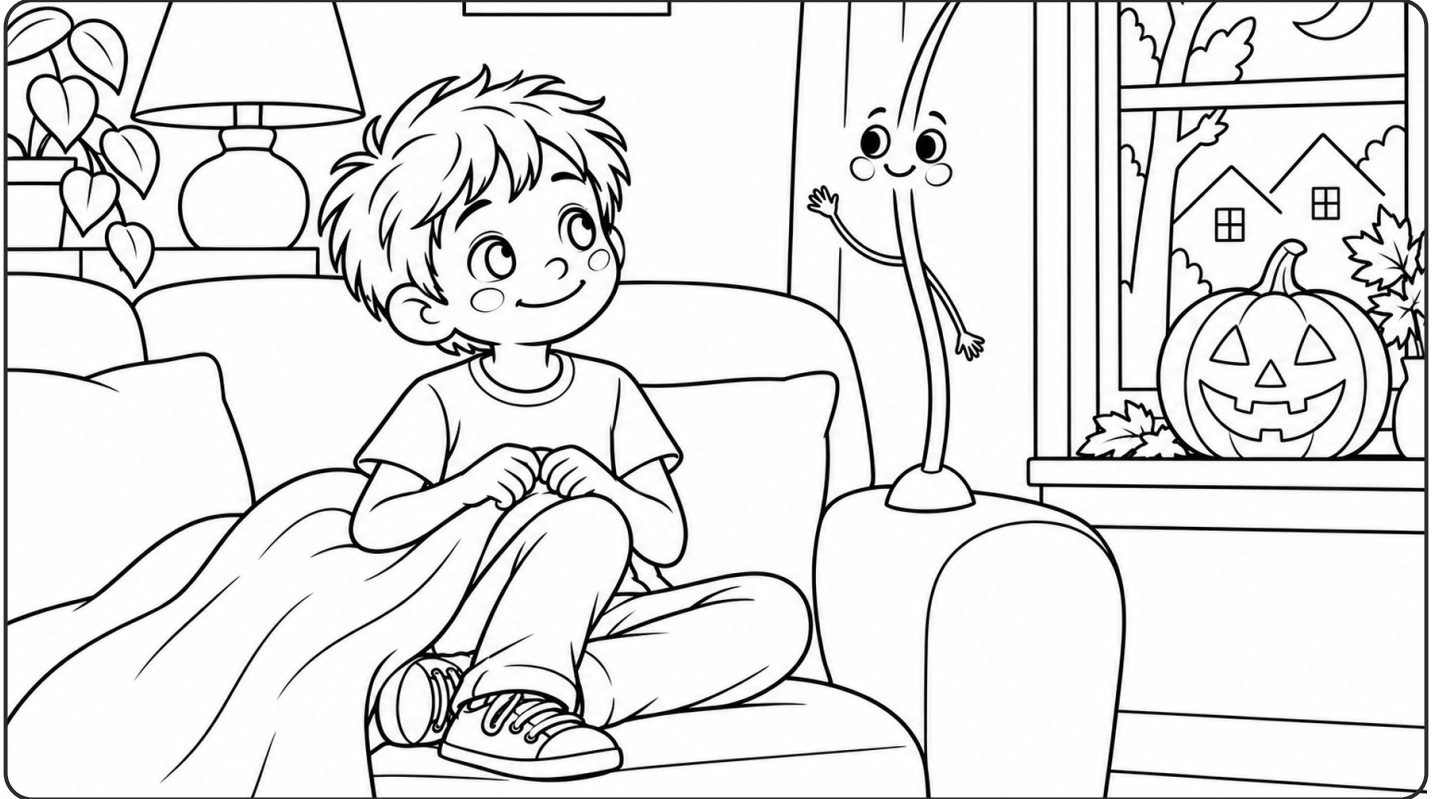


scan with a grown-up

Why do we get goosebumps when we're scared?



You hear a spooky story, and suddenly little bumps pop up all over your arms, and your heart goes thump, thump, thump! Why does that happen?



Why?

1. At the bottom of every tiny hair on your arm, there is a tiny muscle.

When you get scared, or cold, that muscle pulls. The hair stands straight up, and the skin around it gets pushed up into a little bump.

2. Thousands of little bumps pop up together.

Thousands of tiny muscles pull at the same time. People call the bumps goosebumps, because your skin looks like the skin of a goose with its feathers plucked.

3. And the thumping heart? Your brain rings a little alarm.

It sends a message called adrenaline racing through your blood. Your heart pumps faster, you breathe faster, and your muscles get ready to run or jump. When your brain sees it's just your friend in a costume, the alarm turns off and the bumps go away.

Try it! Watch your arms

You need: bath time and a grown-up

1. After a warm bath, step out into the cooler air.
2. Look closely at your arms.
3. Can you see the tiny hairs stand up and the little bumps appear?

What happened? Cold makes the tiny muscles pull, just like a scare does.

Video + more questions:
whywhywhykids.com/goosebumps

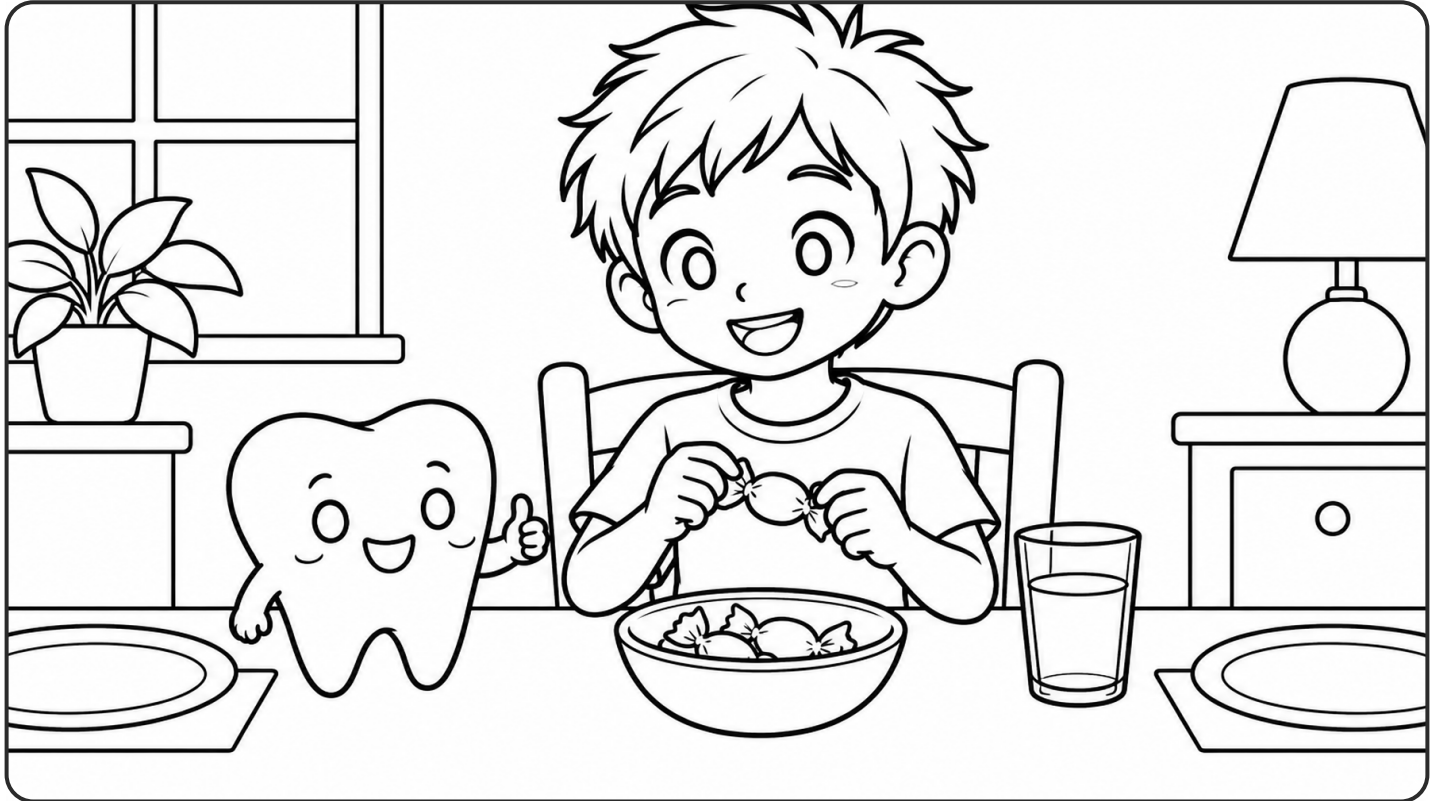


scan with a grown-up

Why does Halloween candy give you cavities?



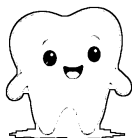
Grown-ups always say that too much candy gives you cavities. A cavity is a little hole in a tooth. But how can candy make a hole?



Why?

- 1. Your teeth wear a shiny suit of armor, called enamel.**
It is the hardest thing in your whole body, even harder than bone!
- 2. A few kinds of tiny germs love to eat sugar.**
They live on teeth, in a sticky film called plaque. When you eat candy, the sugar sticks to your teeth, and the germs have a feast. As they eat, they make a sour stuff called acid.
- 3. Acid slowly washes away tiny bits of the armor.**
One treat is not a problem. But if the acid attacks again and again, day after day, a weak spot can turn into a tiny hole. That's a cavity! A cavity can grow, and it can hurt.

Color Wiggly too!



Try it! Paint the plaque pink

You need: a plaque tablet from the drugstore, a toothbrush, and a grown-up

1. Ask a grown-up for a plaque tablet. Chew it.
2. It paints the hidden plaque pink!
3. Now brush. Can you make all the pink go away?

What happened? The pink shows the sticky film where the sugar-loving germs live.

Video + more questions:
whywhywhykids.com/candy



scan with a grown-up

Why do I get dizzy when I spin around?



You spin around and around, and then you stop. But the room keeps on spinning!
Why do you get dizzy?



Why?

1. Your sense of balance lives deep inside your ears.

It tells you which way is up, and whether you are moving. In there are three little loops. Each one is a tube filled with liquid, with tiny hairs inside.

2. When you turn your head, the liquid bends the tiny hairs.

The liquid lags behind and bends the hairs. They send a message to your brain, "Hey, we are turning!" When you spin round and round, the liquid soon catches up and spins along with you.

3. When you stop, the liquid keeps swirling.

It bends the tiny hairs the other way, so your ears tell your brain, "We are still turning!" But your eyes say, "No, we are standing still!" Your brain gets two different messages at once and gets mixed up. That mixed-up feeling is being dizzy.

Try it! Swirl a cup of water

You need: a cup, some water, and a few tiny bits of paper

1. Fill a cup halfway with water, and drop in a few tiny bits of paper.
2. Swirl the cup around a few times, then set it down.
3. The cup has stopped. But look! Does the water keep going around?

What happened? That is just what happens inside your ears after you stop spinning.

Video + more questions:
whywhywhykids.com/dizzy

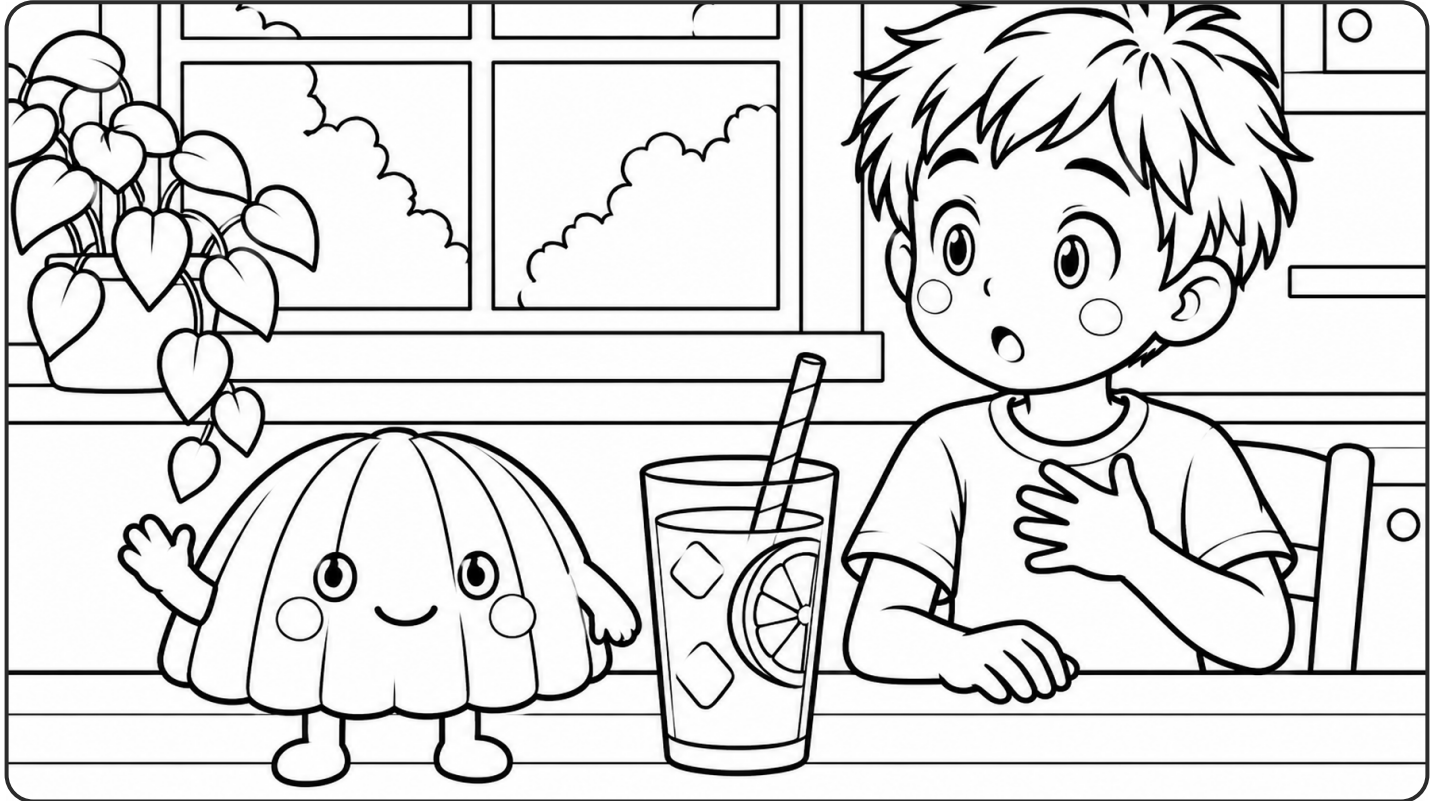


scan with a grown-up

Why do I hiccup?



You are sitting quietly, and suddenly: hic! Then again: hic! And you just cannot stop. What is a hiccup, and how does it happen?



Why?

1. Under your lungs is a wide, flat muscle shaped like a dome, called the diaphragm.

When you breathe in, it pulls down and gets flat, and air rushes into your lungs. When you breathe out, it goes back up. Down, up. Down, up. Nice and smooth.

2. But once in a while, it twitches and jerks down, fast and hard.

That sudden jerk makes you suck in air, very quickly. It is a tiny gasp that you did not plan at all.

3. Then a little gate snaps shut. Hic!

At the top of your windpipe there is a little gate, where your voice is made. Just after the jerk, that gate snaps shut. The rushing air bumps into the closed gate, and that makes the sound.

Try it! Feel your breathing muscle

You need: just your hand

1. Put one hand on your tummy, just below your ribs.
2. Breathe in slowly, and feel your tummy push out. That is your diaphragm moving down!
3. Now breathe out, and feel it go back in.
4. Next time you have hiccups, put your hand there and feel the little jumps.

Video + more questions:
whywhywhykids.com/hiccup

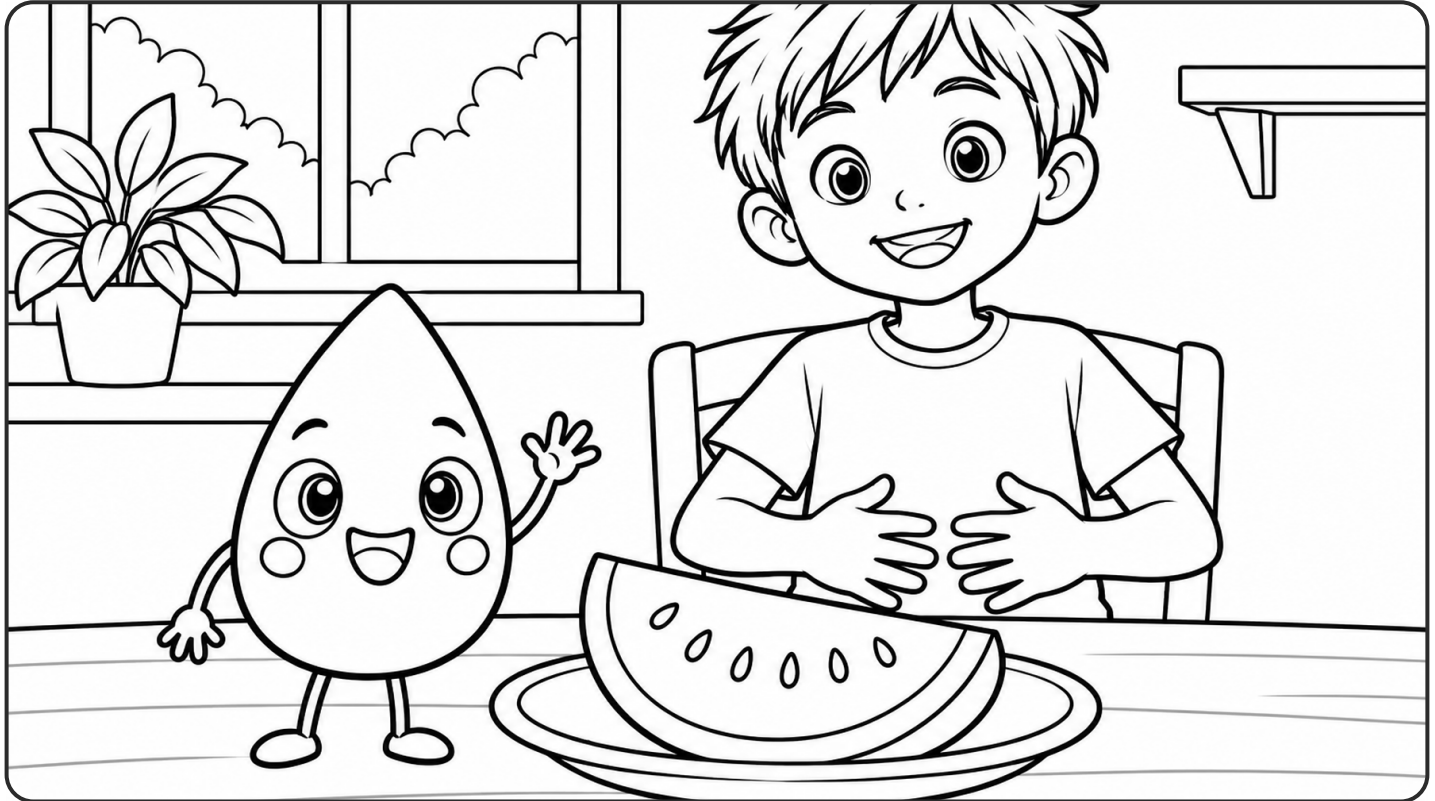


scan with a grown-up

Why does my tummy growl?



The room is very quiet. Then, all of a sudden: grrrr! Your tummy growls, and everybody can hear it. Why does your tummy growl?



Why?

1. Inside you there is a long, soft tube, and its walls are muscles.

Everything you eat and drink travels along it. The muscles squeeze, one part after another, and push everything along. It is like squeezing toothpaste out of a tube.

2. In there are liquid and bubbles of gas.

Most of the gas is air you swallowed while you were eating and talking. When the muscles squeeze liquid and gas along together, it sloshes and gurgles. That is the growl! It is like the glug, glug sound when you pour water out of a bottle.

3. An empty tummy growls the loudest.

When your tummy is full, the food soaks up the sound, like a pillow over a noisy toy. When it is empty, there is nothing to soak up the sound, so the growl gets nice and loud.

Try it! Count the gurgles

You need: someone in your family who says yes

1. Ask someone in your family if you can put your ear on their tummy.
2. Stay very quiet and listen for one whole minute. How many gurgles can you count?
3. Try again after dinner. Is it louder, or quieter?

What happened? Food soaks up the sound, like a pillow.

With less food inside, there is less to soak it up.

Video + more questions:
whywhywhykids.com/tummy



scan with a grown-up

How does a scab help my cut get better?



You fall down and scrape your knee. A day later, there is a hard, dark crust on it, called a scab. What is a scab, and how does it help your cut get better?



Why?

1. Your skin is like a wall, and a cut is a hole in that wall.

The wall keeps the good things in, like your blood, and the bad things out, like dirt and germs. Through a hole, blood can leak out and germs can get in. Your body has to fix it, fast!

2. Tiny platelets rush over and plug the hole.

Platelets float in your blood all the time, waiting. They stick to the edges of the hole and to each other, and pile up. In just a few minutes they make a soft plug, and the bleeding stops.

3. Sticky threads hold it tight, and the top dries hard.

Your blood makes sticky threads, thinner than a spider's web. They weave over the platelets like a net. This is called a clot. The top of the clot touches the air, so it dries out and gets hard. That is the scab, a lid your body made by itself!

Try it! Be a scab watcher

You need: a scrape that is already healing

1. Look at the scab every day. Just look, don't pick!
2. Does it feel tight or itchy? That usually means it is healing.
3. When it falls off by itself, look at the new skin. It is pink at first. Watch it slowly turn to your own color.

What happened? Under the scab, new skin grows in from the edges, a tiny bit every day, until it covers the whole spot.

Video + more questions:
whywhywhykids.com/scab



scan with a grown-up

Why do we fart?



Sometimes a little puff of gas comes out of your bottom. It is called a fart. But where does that gas come from? Why do we fart?



Why?

1. First of all, everybody does it!

Kids, grown-ups, grandmas, teachers, even dogs and cows. Most people do it more than ten times a day!

2. Some of the gas is air you swallowed.

Every time you eat, drink or talk, you swallow a little bit of air. Some of it comes right back up as a burp. The rest keeps traveling, all the way through the long tube inside your tummy.

3. The rest is made by tiny helpers in your tummy.

They are called bacteria, and they are much too small to see. Your body cannot break down every bit of your food by itself. So the helpers munch the tough bits and turn them into things your body can use. While they work, they make gas.

Try it! Listen to yourself swallow

You need: a glass of water and a straw

1. Drink a glass of water slowly, and listen to yourself swallow.
2. Now drink through a straw, or drink while you talk.
3. Do you swallow more air that way?

What happened? Eating slowly, with your mouth closed, means less air in your tummy.

Video + more questions:
whywhywhykids.com/fart



scan with a grown-up