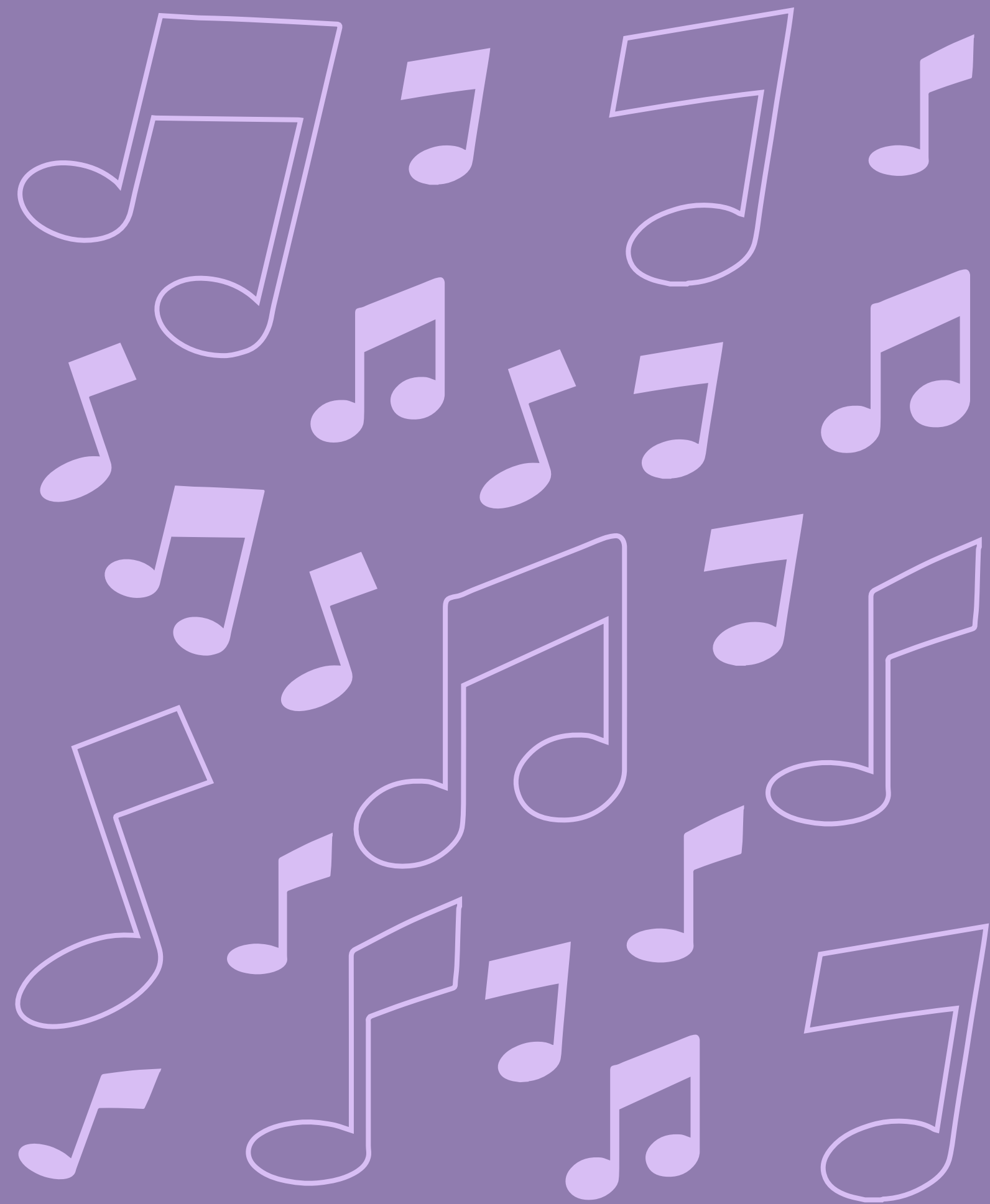
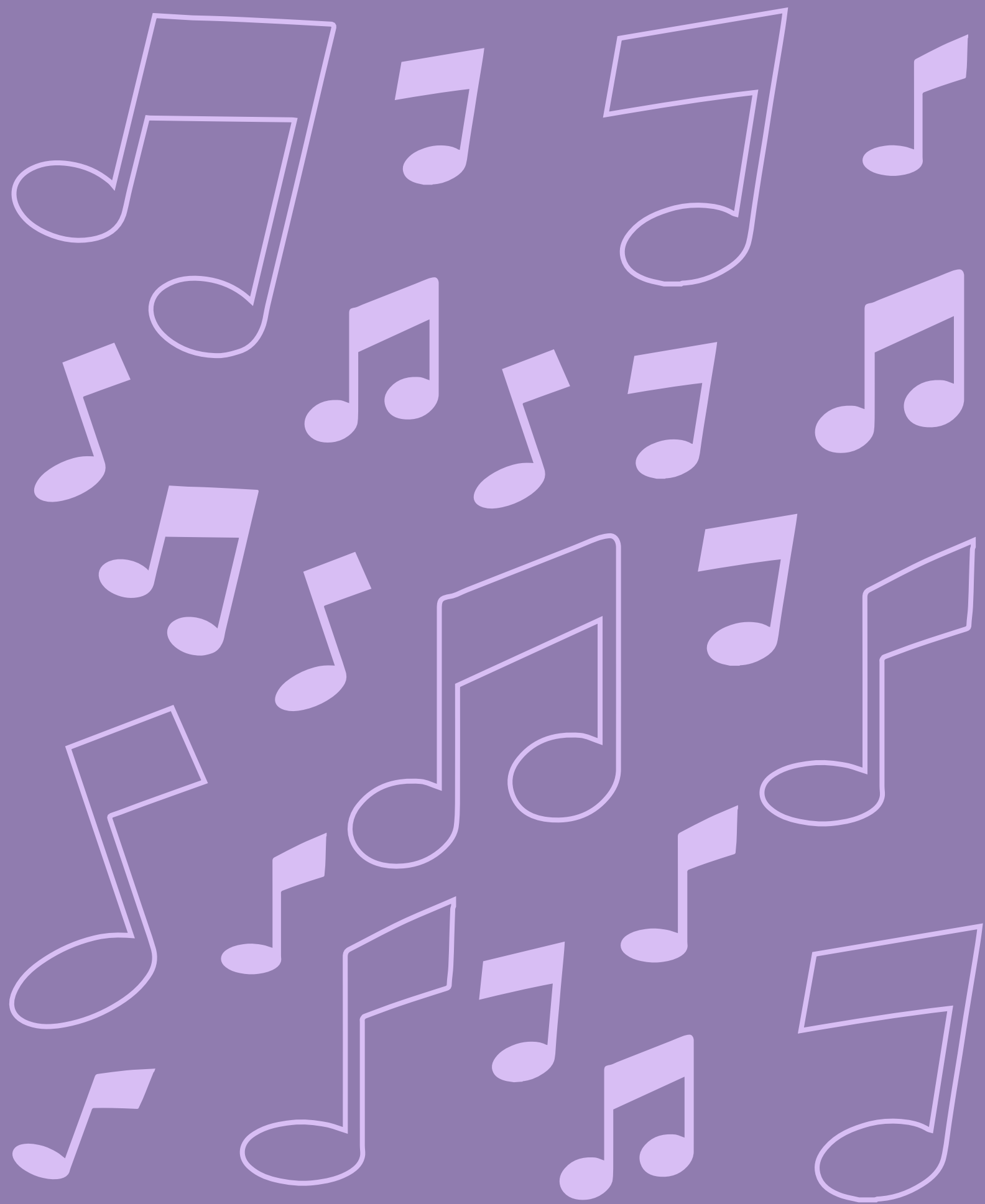


# SOUNDS, SOUNDS EVERYWHERE

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# WHAT IS SOUND?

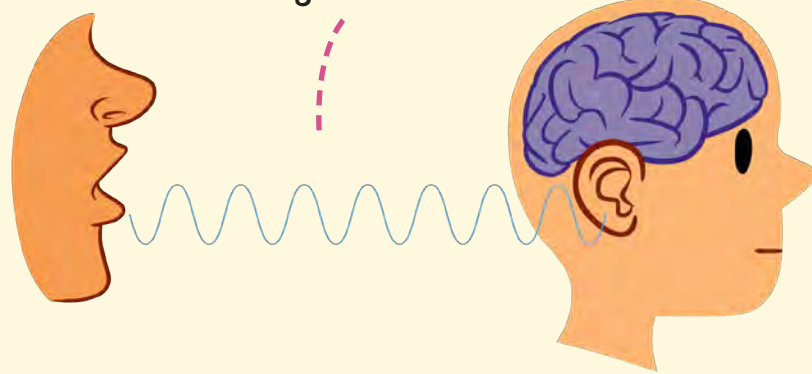
You are probably inclined to answer: 'Sound is everything we hear.' Tones, blows, whistles, rumbles, trills, squeals, voices, songs, melodies, etc. Sound is with us always - every day of the week, every step of the way. But what exactly is it?

Sound is a kind of **energy** that is released by **vibration**.

When something vibrates (e.g. the human vocal cords),

... until they reach our ears - which hear them at once.

... waves of vibration travel through the air ...



When a thing vibrates, the vibration transmits to **molecules in the immediate vicinity** (e.g. in the air). These collide with ever more molecules as the vibration gradually **travels through space**. A **drum's surface** vibrates when it is struck with a stick. Vibrations travel to the listener from the point of impact.

Once sound waves reach the human ear, this sends a **signal to the brain**. The brain decides how a sound is understood. Our processing a sound in the right way is as important as that sound reaching us.



Sound waves travel through solids, liquids and gases. The greater the vibration, the louder the sound created.



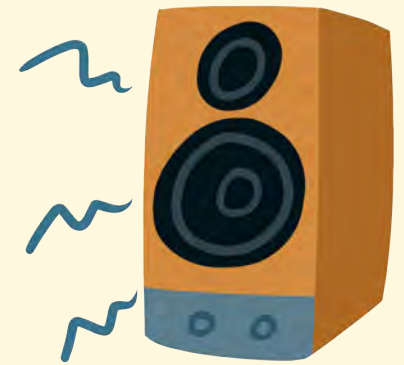
miaowing kitten



birdsong



loud music



## EVERY SOUND IS UNIQUE:

A miaowing kitten doesn't sound like a passing tractor, nor does an out-of-tune piano remind us of a church choir. The music your elder brother plays in his bedroom is surely very different from birdsong.

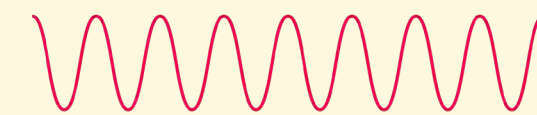
out-of-tune piano



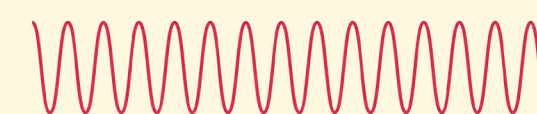
choir



You may have heard the term '**audio frequency**'. It refers to the rate per second at which a wave of vibration occurs. Sounds with very high or very low frequency can't be heard by the human ear.



low frequency



high frequency

The sight of those goodies is making my tummy rumble. I'm so hungry!



# Sounds that ARE MADE BY OUR BODY

... never lie. They know all about what goes on inside a person. If he is terribly hungry, has eaten something that disagrees with him, or needs rest, they are sure to remind him. Burble, burp, err, gr-rr ... Some sounds are so quiet that only the maker hears them. Others draw attention from everyone nearby. It's right to listen to them ...

Time for sleep, and dreams of a lovely slab of meat!



Ha-ha-ha! A farting teacher! He must have been hoping we wouldn't notice. Hee-hee-hee!



I'm s-so c-cold, my t-teeth are ch-chattering ...



What the—! I've lost my voice! Hopefully I won't have to cancel tomorrow's concert.



Phew ... I ... did ... it ... I broke ... the record ... phew ...

An ECG is a machine that records a person's heartbeat to make sure it is healthy.



Ringing in the ears can be very unpleasant ...





Lovers of **classical music** like to go to concerts ...

The world of music is incredibly varied.

# WHAT IS MUSIC?

Have sounds ever enchanted you by their beauty, stunned you with their power, changed your mood, or made you get out of your chair and dance? Only music can do this. It is a system of sounds that forms a **harmonious whole**. It is made by the vocal cords (by singing) or various instruments.

Music has always awakened all kinds of human feelings and moods. It is impossible to imagine our lives without it. Which types of music do you like?

As it unites young and old, **folk music** often features at big celebrations ...



As well as being great to listen to, romantic **jazz** and **swing** make you want to dance ...



We turn to **rock, pop** and other modern beat music to have fun alone or with friends ...

We divide musical instruments into these groups:

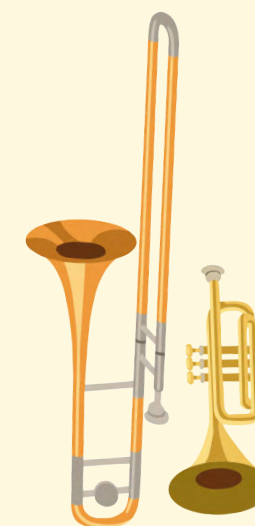
It's easy to make music – by knocking a fork against a glass, stamping our feet, singing, drumming on a cardboard box ... **Musical instruments** were invented for the express purpose of making music. Each instrument conjures up a unique, original tone.



percussion



wind



brass



strings



The bark of a trusty shepherd dog will scare away any wolf keen on its charges.



All together now: five, six, seven, eight ...!



# Sounds that ORGANIZE

Tick, tock, tick, tock. Time runs the same for everyone.



... are among the very most useful. Out of chaos and disorder they make orderly, regular patterns. But it's no simple matter. Yo heave ho! One, two, three! When they command us to do something, they can be a real bother ... But how great it is in the end, when everyone moves as one!

On the count of three, Jack. One, two, three, and up!



See you after class, then!

Do you hear the catchy beat? Everyone would love to be part of the scouts' parade!



Hear that call? The wolves are gathering for the night's hunt.



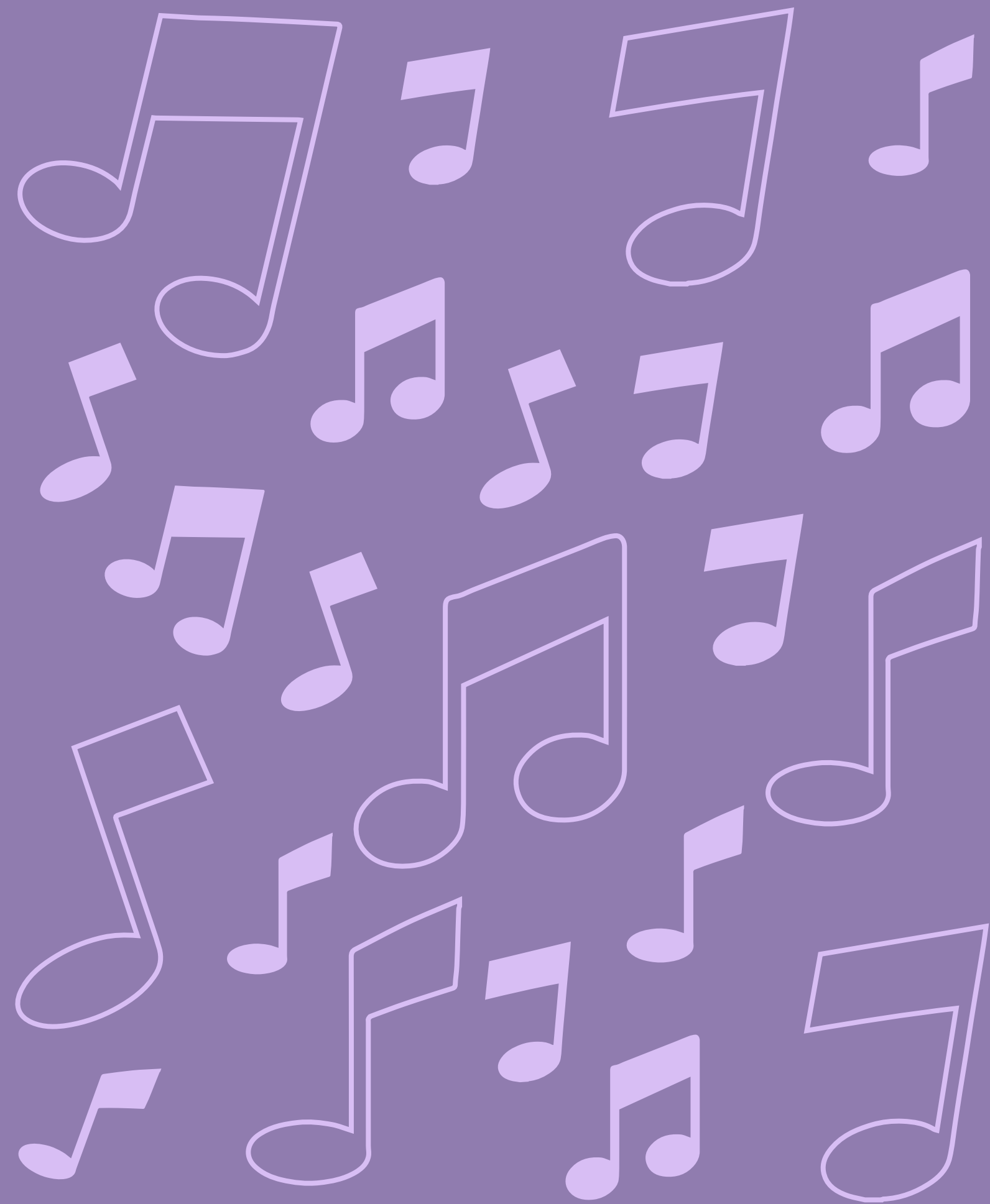
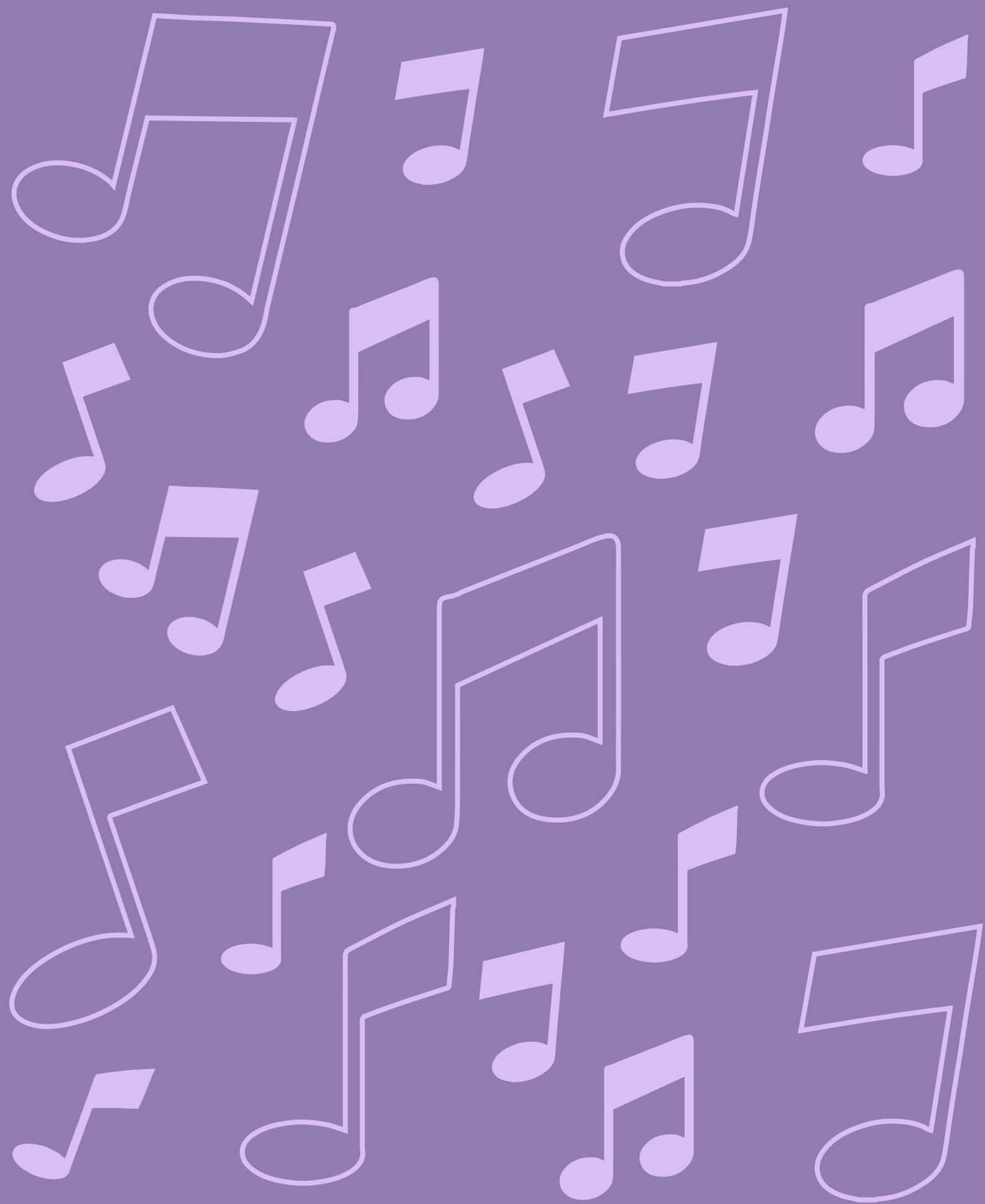
Please stand clear of the closing doors.





Describe all the things going on in the picture. What sounds do you hear in these situations?  
???









Knock knock! Whirrr ... Clap! Ooh! Uh, ugh! Ha ha! Do you hear that? The world we live in has never known perfect silence. There are all kinds of noises around us! Regular and sporadic, loud and barely audible, considerable and subtle – they are surrounding us from morning to evening, and at night too. But do you really understand what they mean? Each kind of crying, clatter, buzzing, tapping, beating and so on can tell us a lot about their origin and surroundings, and can even change our mood! Open this book and let sounds come at you from the pages. Can you hear them flip in your hands?

