Changing Sound

Learning Objective:

To find out how sounds can be made by air vibrating and how to change the pitch of notes produced by vibrating air.

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Have a look at these pictures of woodwind instruments. How do you think sound is produced for each one?

Clarinet

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Flute

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Oboe

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Recorder

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Flutes produce a sound when air is blown across the mouthpiece. In order to change the pitch of the note that is produced, flautists use their fingers to cover the keys. The more keys they press as they get further down the flute, the longer the air column becomes. This means that the air has a larger area in which to vibrate and so the pitch of the note changes.

Do you think the sound produced would be higher or lower as more keys are covered and the air column becomes longer? Why?

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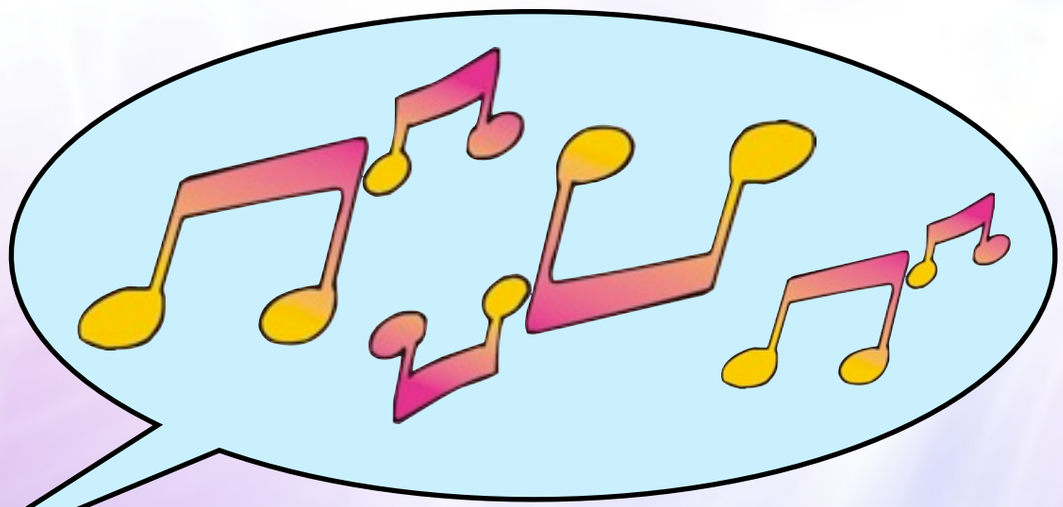
You can produce a note by blowing across the top of a bottle in the same way that you would blow across the mouthpiece of a flute. As you blow into the bottle, it causes the air inside the bottle to vibrate and so creates a sound.



How do you think you could change the pitch of the note produced?

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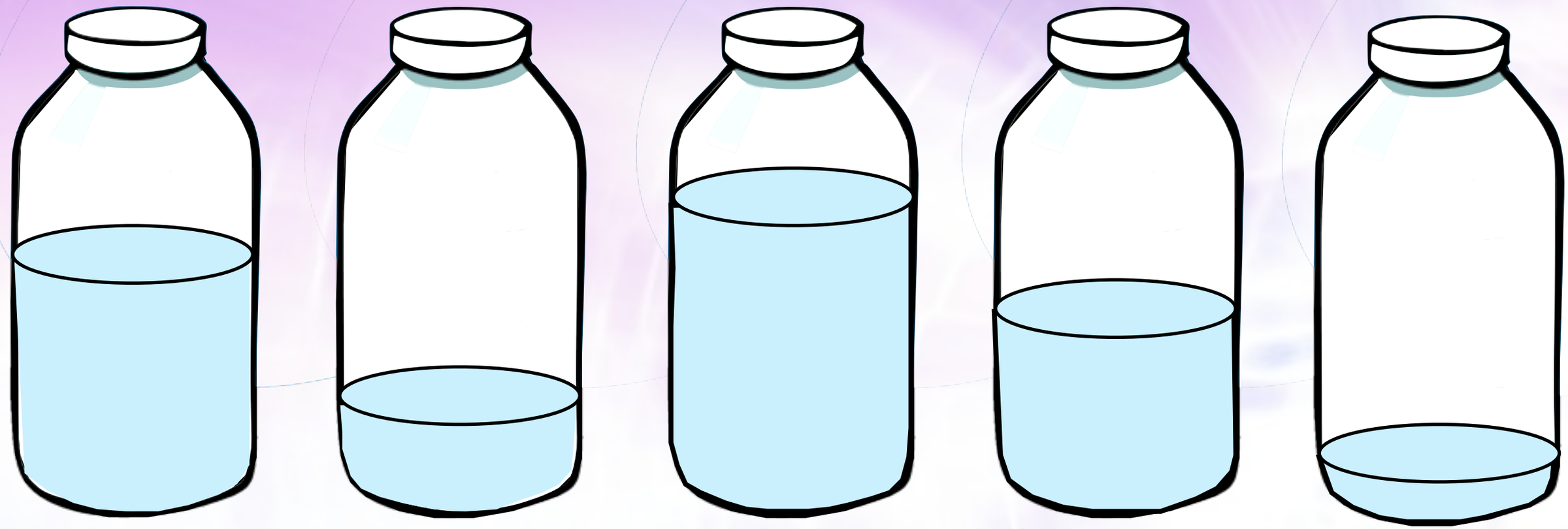

How do you think the pitch of the sound produced when these bottles are blown would be different?

Can you order the bottles from the highest pitch to the lowest pitch?

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