



СУ "Летец Христо Топракчиев"



## Virtual Short-Term Exchange of the “STEM Education”

### ANALYSIS of SOUND - INTERACTIVE TEST

STEM SUBJECT: Physics

TOPIC: Sound

TYPE OF THE ACTIVITY: Interactive Test based in Kahoot

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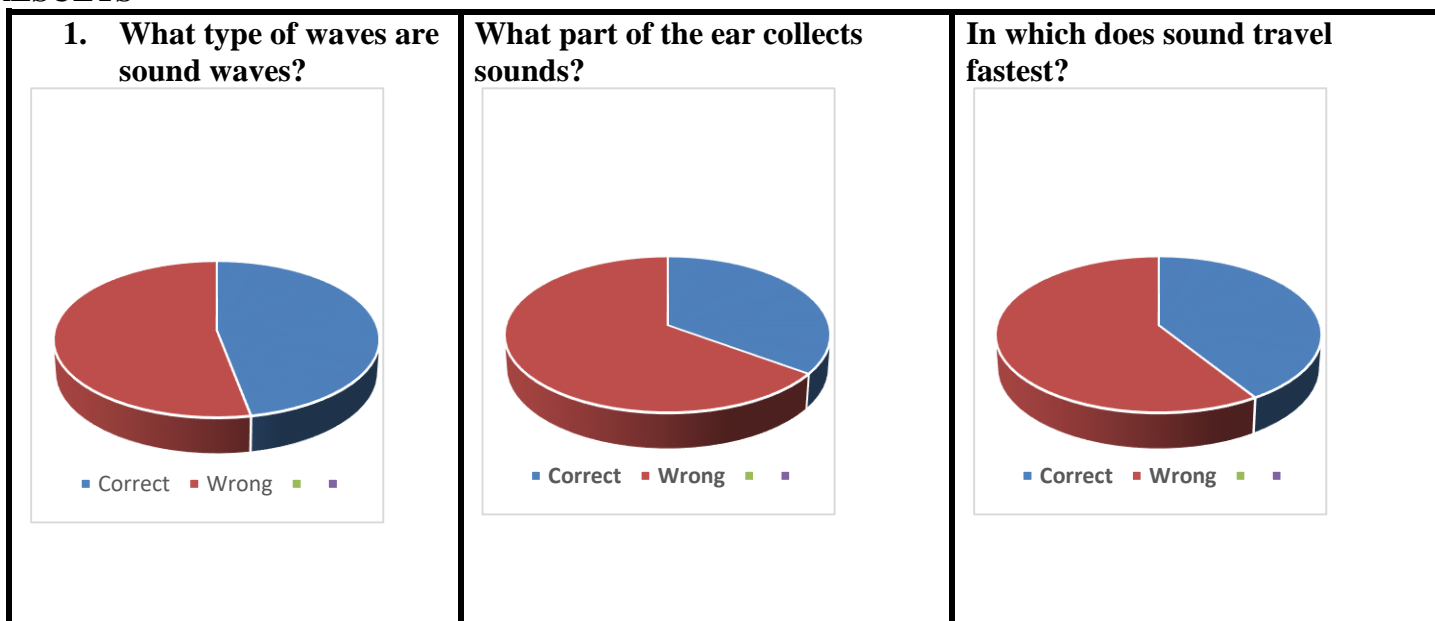
#### PART 1

##### AIMS of the ACTIVITY:

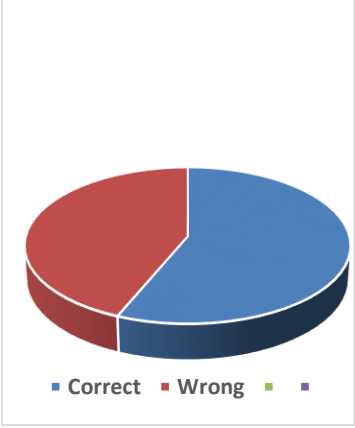
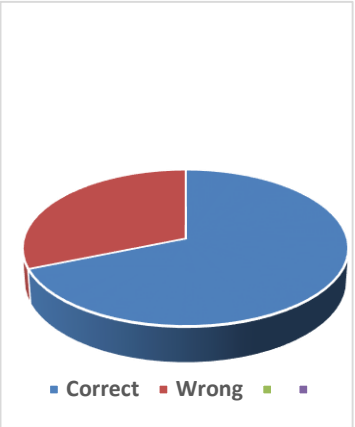
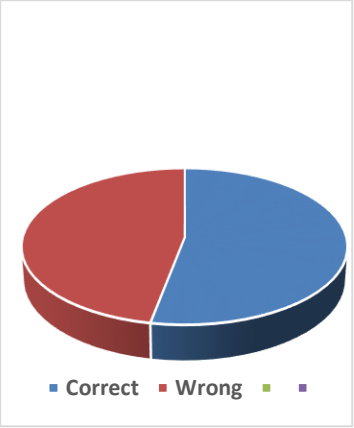
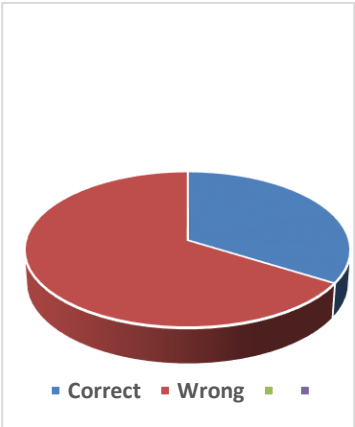
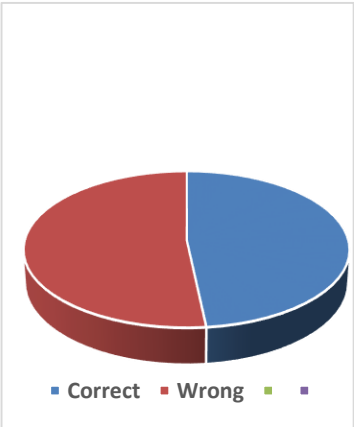
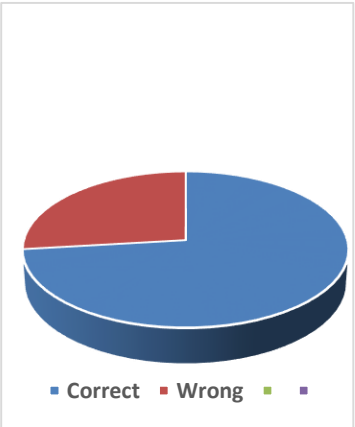
1. To assess the learning process on Sound
2. To engage students' enrollment in educational process
3. To train skills for analysis, interpretation, researching and interaction
4. To deepen physics skills by doing personal researches
5. To show the connection of Physics, and Sound in particular, with the situations in daily life.
6. To enrich the methods of thinking and concentration.
7. To form a positive attitude towards Physics, creating interest and motivation for students.
8. To entertain the learning process.

#### PART 2

##### RESULTS

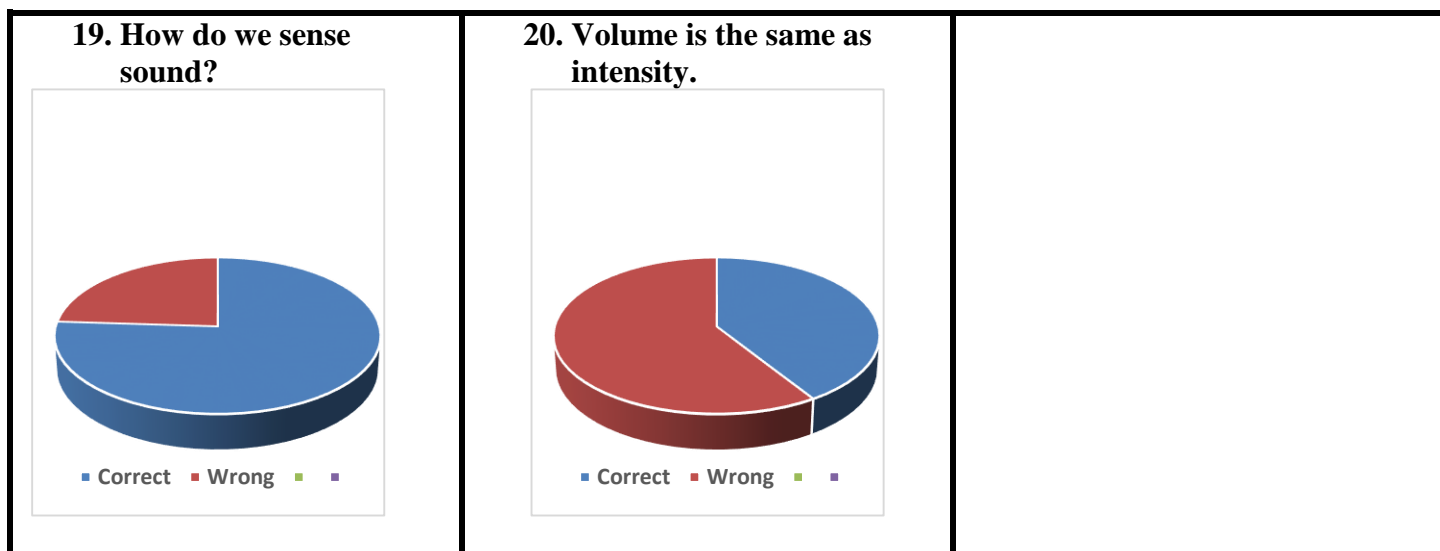




<p><b>4. Above what frequency is ultrasound?</b></p>  <p>■ Correct ■ Wrong ■ ■</p>	<p><b>5. A student holds two vibrating objects. Object A is vibrating faster than object B. Which statement is true?</b></p>  <p>■ Correct ■ Wrong ■ ■</p>	<p><b>6. The average frequency range for human hearing is</b></p>  <p>■ Correct ■ Wrong ■ ■</p>
<p><b>7. This animal is most likely to communicate through infrasonic waves</b></p>  <p>■ Correct ■ Wrong ■ ■</p>	<p><b>8. Sound waves of a lower frequency will likely travel farther than sound waves that have higher frequencies.</b></p>  <p>■ Correct ■ Wrong ■ ■</p>	<p><b>9. Sound waves are unable to travel in a...</b></p>  <p>■ Correct ■ Wrong ■ ■</p>



<p><b>10. The number of wavelengths that pass a point each second</b></p> <p>■ Correct ■ Wrong ■ ■</p>	<p><b>11. What does pitch depend on?</b></p> <p>■ Correct ■ Wrong ■ ■</p>	<p><b>12. What do we call the loud noise made by airplanes when they exceed the speed of sound?</b></p> <p>■ Correct ■ Wrong ■ ■</p>
<p><b>13. What unit of measure is used to measure the loudness of sound?</b></p> <p>■ Correct ■ Wrong ■ ■</p>	<p><b>14. Loud sounds over a long period of time can damage your hearing.</b></p> <p>■ Correct ■ Wrong ■ ■</p>	<p><b>15. The power carried by sound waves per unit area in a direction perpendicular to that area is</b></p> <p>■ Correct ■ Wrong ■ ■</p>
<p><b>16. What medium does sound travel through slowest?</b></p> <p>■ Correct ■ Wrong ■ ■</p>	<p><b>17. High pitch sounds are caused by a.....vibration?</b></p> <p>■ Correct ■ Wrong ■ ■</p>	<p><b>18. When a sound is louder what measurement gets bigger?</b></p> <p>■ Correct ■ Wrong ■ ■</p>



### **PART 3**

#### **Analysis and Tendencies**

The analysis of the results of the Sound interactive test is a tool for evaluating the Physics lesson activities involved in the stage of the project. The activity is an instrument to present the effective and beneficial cooperation among students and teachers as long as the positive outcomes of the learning and teaching process implemented in the project schedule. Analysis of the interactive test determines the weak points where the educational process has to be improved. It also points the strong ones and students' development. It also guides the Bulgarian team to plan measures for prevention activities for teaching and learning STEM subjects. Prevention services can be greatly enhanced by developing clear vision statements, objectives, comprehensive strategies, and detailed action plans, concerning the points, which have to be improved. The results of the test show the following most important tendencies:

1. Lack of high concentration in online educational environment reflects the percentage of correct answers.
2. Teachers' inability to monitor, support and control the educational process in online educational environment leads to lower results.
3. Difficulties in answering scientific theoretical questions.
4. Very good results in answering questions, which concern common and experienced physics problems linked to Sound.
5. The average percent of correct answers is about 56 %, which needs measures for improvement.
6. Necessity for improving students' motivation for taking part in online learning process.
7. The importance of interactive tools to teach and learn STEM subjects, Physics in particular.