**1.** With the knowledge already acquired, and after doing some research, answer the following questions:

* 1. Do you have any idea how the particles spread through the air? **(Note:** you can access the available links below, on the section “To Learn More…”. By using the keywords, it is possible to find the information to answer this question).

As seen in class 1, the particles propagate and remain suspended in the air due to the presence of external forces applied to the particle, namely the force of gravity and the air resistance force, and due to the thermodynamic conditions of the space in which the particles were emitted (pressure, temperature/humidity and air velocity), smaller particles tend to stay suspended in the air longer, traveling longer distances, and larger particles tend to settle earlier on surfaces around them.

* 1. Fill out the crosswords related to the class theme.

1 . Mechanical system of air circulation. 7. Disease that spreads through the air.

2 . Property of a fluid. 8. Name for the fluid movement.

3 . Property of a fluid. 9. Disease that spreads through the air.

4 . Force that acts on a respiratory droplet. 10 . Property of a fluid.

5 . Property of a fluid. 11 . Disease that spreads through the air.

6 . Force that acts on a respiratory droplet.

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|  | **4** | R |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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1 – ventilation

2 – speed

3 – density

4 – resistance

5 – temperature

6 – gravity

7 – tuberculosis

8 – flow

9 – flu/influenza

10 – pressure

11 – covid-19

* 1. What is the range between the dimensions of a respiratory droplet? Choose the correct option. (**Note:** use the links on the section “To Learn More…” to answer the question correctly).

1. 1 to 10 μm.
2. 1 to 2000 μm (micrometre).
3. 50 to 500 μm.
4. 100 to 1500 μm.

The size of the respiratory particle depends on the breathing regime, as observed in table II of **DER14**, where these values can range from 1 to 2000 μm.

**To Learn More…**

If you would like to explore further about this class theme, on the Keywords Table there are several links available, with additional information, related to each keyword. To access this information, click on the corresponding link on the section “References”.

**Keywords Table**

|  |  |
| --- | --- |
| **Keyword** | **Reference Number** |
| Dimension of the Respiratory Droplets | **[1]** |
| Spread of Respiratory Droplets | **[2]** |
| Diseases Spread through the Air | **[3] [4]** |

**References**

**[1]** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7196697/>

**[2]** <https://aip.scitation.org/doi/pdf/10.1063/5.0063475>

**[3]** [Airborne Diseases: Types, Prevention, and More (healthline.com)](https://www.healthline.com/health/airborne-diseases)

**[4]** [AirBorne Diseases | Medicover Hospitals](https://www.medicoverhospitals.in/articles/air-borne-diseases)