Appendix A.

Questions on scientific literacy derived from Fernbach et al., (2019)

-   The center of the Earth is very hot.

-   The continents have been moving their location for millions of years and will continue to move.

-   The oxygen we breathe comes from plants.

-   Antibiotics kill viruses as well as bacteria.

-   All insects have eight legs.

-   All radioactivity is manmade.

-   Men and women normally have the same number of chromosomes.

-   Lasers work by focusing sound waves.

-   Almost all food energy for living organisms comes originally from sunlight.

-   Electrons are smaller than atoms.

-   All plants and animals have DNA.

-   Humans share a majority of their genes with chimpanzees.

-   It is the father's genes that decide whether the baby is a boy or a girl.

-   Ordinary tomatoes do not have genes, whereas genetically modified tomatoes do.

-   The earth orbits the sun.

Appendix B.

Introduction used for the perceived understanding questions adapted from Fernbach et al., (2019)

We will ask you to rate your understanding of COVID-19 vaccines and COVID-19 preventive behavior on a seven-point scale. To ensure you understand the scale, this section explains what the seven levels of understanding mean, using the example of how a crossbow works. Please read each description to get a sense of how to use the scale. As you will see, a 7 implies detailed and deep knowledge, a 1 implies very little knowledge, and a 4 is in the middle.

Level 7 knowledge (detailed and deep): A person with level 7 knowledge of crossbows can tell you all about their parts and how they work together. This person could tell you that a crossbow has a stiff, flexible piece of metal as a bow with a wire or strong line; that the bow is permanently mounted on a block of wood or metal; and that the wire is pulled back by something that gives a mechanical advantage—either a lever, a small block and tackle, or a crank wound around a spool that pulls a wire attached to the bow wire. The bow wire is held back by a pin connected to a trigger, and an arrow is set in front of it. The pin is directly connected to the trigger so that when you pull on the trigger, it causes the pin to pivot around a point such that the end moves downwards and releases the bow wire. When the pin releases the string, the bow very quickly un-flexes, rapidly imparting the energy stored in the flexed bow to the arrow.

Level 4 knowledge (middle): A person with level 4 knowledge might know that the crossbow is a fixed bow and arrow arrangement; that it gets more power than a normal bow and arrow because it allows you to pull the string back extra hard and then trap it there, rather than hold it; and that it is then released by a trigger.

Level 1 knowledge (very little): A person with level 1 knowledge might know what a crossbow looks like and what it does (shoots arrows).