

Figure 7. The Exhibit

PISA 2022

Refer to the information on the right. Type your answers to the question in the boxes below.

Describe **3 different ideas** for a wall that allows the squirrels but not the rats, to pass from room to room. The ideas should be as different from each other as possible.

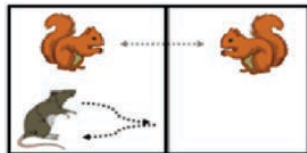
Clearly explain how each idea works, and be specific about the technique or tools you would use.

We recommend that you spent no longer than **5 minutes** on this question.

THE EXHIBIT

You are in charge of creating an exhibit for squirrels and rats for an animal park. The exhibit consists of two glass rooms separated by a single wall that runs floor to ceiling.

For feeding reasons, you need to design a separating wall that allows the squirrels to pass from room to room while preventing the rats from passing through. Squirrels and rats have the same body size but the squirrels are heavier than the rats. Squirrels are also faster and more agile than the rats.



Box 13. Most creative responses across countries for The Exhibit item.

- [...] να βάλουμε δύο δέντρα και από τις δύο πλευρές του τείχους για να μπορούν να σκλαραλώνουν οι σκίουροι και να πιδάνε από το ένα κλαδί στο άλλο [...]. // [...] put two trees on both sides of the wall so that the squirrels can perch and jump from one branch to the other [...]. (Greece)
- parete con ostacoli che richiedono un grado abilità motorie possedute solo dagli scoiattoli. possibilmente gli ostacoli sono posizioni ad un'altezza di oltre 3 metri da terra. [...] lo scoiattolo potrà arrivare alla sua destinazione, dove si posiziona una ricompensa per spronarlo. // A wall with obstacles that require a degree of motor skills possessed only by squirrels. the obstacles are preferably positioned at a height of over 3 metres from the ground [...] the squirrel will be able to reach its destination, where a reward is placed to encourage it. (Italy)
- Another system could be created in which a sliding door would open and close at a pace [...] Squirrels would be able to use this system because they are faster than rats and more agile. They would have enough agility and speed to pass through the doors before they close. (Canada)
- 弄一个一次只能进去一个动物的空间，下面有一块板子，板子只会在有一定重量时才会沉下去，沉下去后就会有一个洞可以让松鼠钻过去 而老鼠因为太轻不会令板子下沉，就不能看见那个洞了 // Make a space where only one animal can go in at a time. There is a board at the bottom that will only sink when there is a certain weight. After sinking, there will be a hole for the squirrel to go through. while the mouse, being too light to make the board sink, will not be able to see the hole. (Hong Kong)

- **Tehtnica, ki ima na eni strani utež, ki je težja od podgane, vendar lažja od veverice. Ko veverica stopi na drugo stran tehtnice se dvigne utež, kar dvigne tudi prehod na drugo stran stene(s pomočjo vrvice) [...]** // *A scale with a weight on one side that is heavier than a rat but lighter than a squirrel. When the squirrel steps on the other side of the scale, the weight is lifted, which also lifts the passage to the other side of the wall (with the help of a string) [...]* (Slovenia)
- **Eine hohe Wand aus Stahl, die nur mit einem Aufzug überwunden werden kann trennt die Teile. Der Lift fährt nur hoch, wenn das Gewicht des Eichhörnchens sich darauf befidet.** // *A high wall of steel, which can only be crossed with an elevator, separates the parts. The lift only goes up when the weight of the squirrel is on it.* (Germany)
- **هحتفلا نوكت تيحب دي عب نم هعرسل راعشت سا زاهج وا ةباوبال حتفت رعشلل دجو اذا ف رعشلل راعشت سا زاهج عضو نكمي ملعي دق اذه و ئطب اناك اذا قلغت و باجنس ةعرس تناك اذا حوتفم يقبت اهي ل م داقال نئال هعرس سايق نم و ةحوتفم اهي لعل قلغت الي كل حوتفم بابال ةيؤر دن هعرسل وه و بستكم كولس بج انسل** // *A hair sensor can be placed, and if hair is found, the gate opens, or a speed sensor from afar so that the opening is open and from measuring the speed of the object coming to it, it remains open if it is the speed of a squirrel and closes if it is slower, and this may teach squirrels a learned behaviour, which is speed when they see the door open so as not to close on them.* (Saudi Arabia)
- **una pared que tenga una inteligencia artificial visual que permita reconocer ardillas y ratones con analisis de cámara** // *a wall with a visual artificial intelligence that can recognise mice and squirrels with camera analysis* (Chile)
- **Mettre en place une petite trappe s'ouvrant à l'aide d'un fil suspendu en haut de la boîte auquel sera accroché une noisette. L'écureuil, plus agile que le rat pourra sauter afin s'attraper la noisette, déclencher la trappe et traverser la cloison.** // *Set up a small trap that opens with the help of a thread suspended from the top of the box, to which a hazelnut will be attached. The squirrel, more agile than the rat, will be able to jump to catch the hazelnut, trigger the trap and cross the partition.* (Belgium)
- **montaria uma gangora divida no meio com um estilo de portao dividindo os dois lados da gangora, de um lado ficaria um senso de movimento, toda vez que um bicho subisse na gangora do outro lado dela seria colocado um objeto com peso o suficiente para levantar o lado dos bichos...** // *I would set up a gangway split down the middle with a gate style door dividing the two sides of the gangway, on one side there would be a motion sensor, every time an animal climbed the gangway on the other side of the gangway an object would be placed with enough weight to lift the side of the animals...* (Brazil)
- **un sistema de resorte,unido a una pequeña plataforma donde podrán acceder tanto ratas comò ardillas, la plataforma impulsará con la fuerza suficiente para llegar al otro lado si un peso similar al de una ardilla promedio es el que esta en la plataforma** // *a spring system, attached to a small platform where both rats and squirrels can access, the platform will provide enough force to reach the other side if a weight similar to that of an average squirrel is on the platform.* (Colombia)
- **on peut utiliser un odeur ou forme que la souris craint Mais que l'ecureuil ne craint pas** // *you can use a smell or shape that the mouse fears but that the squirrel does not* (France)
- **uma porta automática poderia ser acionada a partir de um serviço exterior controlado por um humano, que através de camaras poderia distinguir rato de esquilo.** // *an automatic door could be triggered from an external service controlled by a human, who through cameras could distinguish rat from squirrel.* (Portugal)
- **속도감지 쳃바퀴, 일정수준이상의 속도로 쳃바퀴가 돌아가면 문이 열림.** // *Speed-sensing wheel, and when the wheel spins at a certain speed, the door opens.* (Korea)

Note: Student responses are shown as they were submitted in the PISA 2022 creative thinking test, including creative spelling and grammar. The notation [...] indicates where student responses have been shortened for brevity.