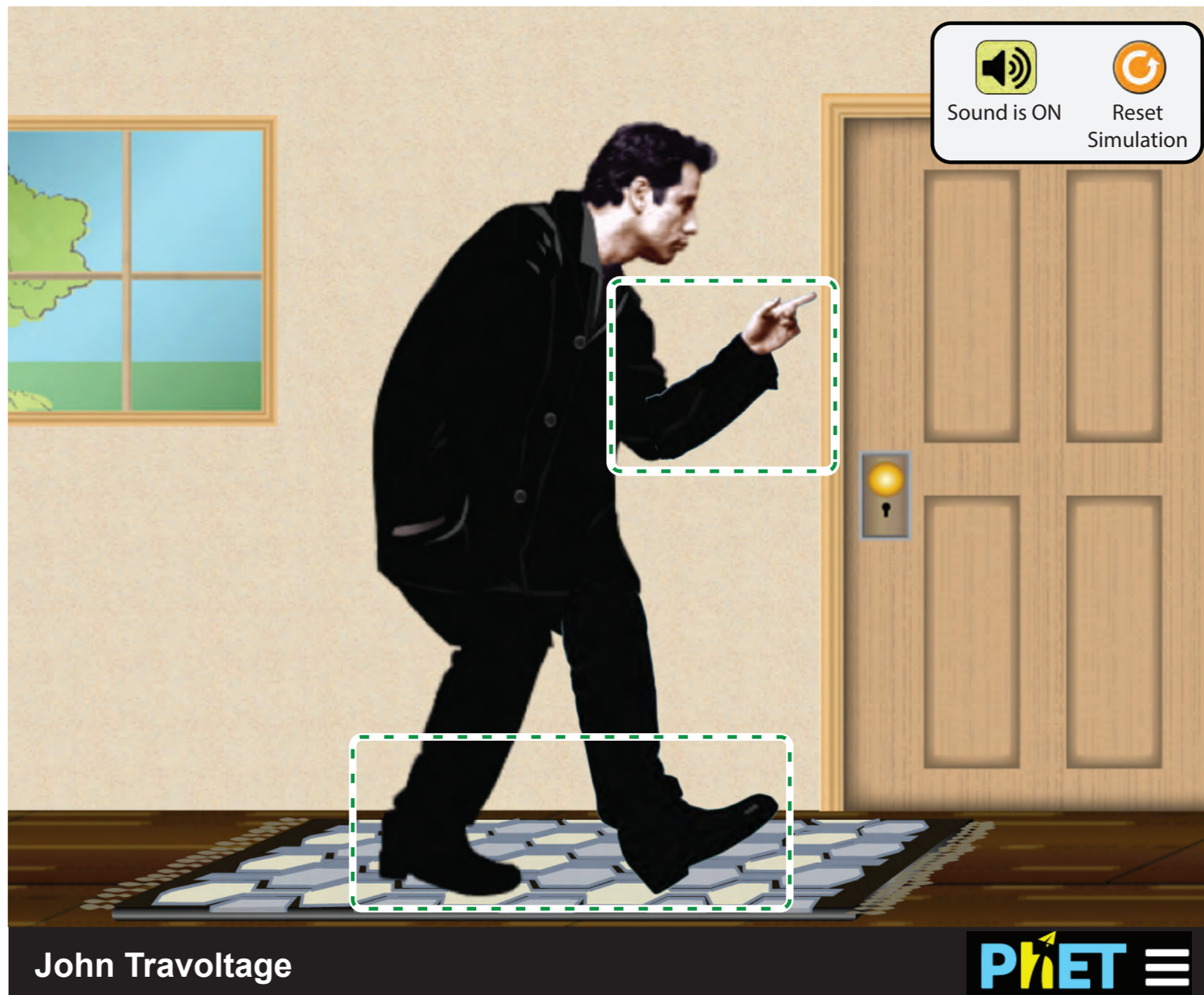


Initial View



On initial load, dotted highlights appear around the arm and leg.

These dotted boxes are not focus boxes, and they will disappear once the user has focused them.

### User Presses Tab - Focus Moves to Leg First



User can use the left and right arrow keys to move the leg.

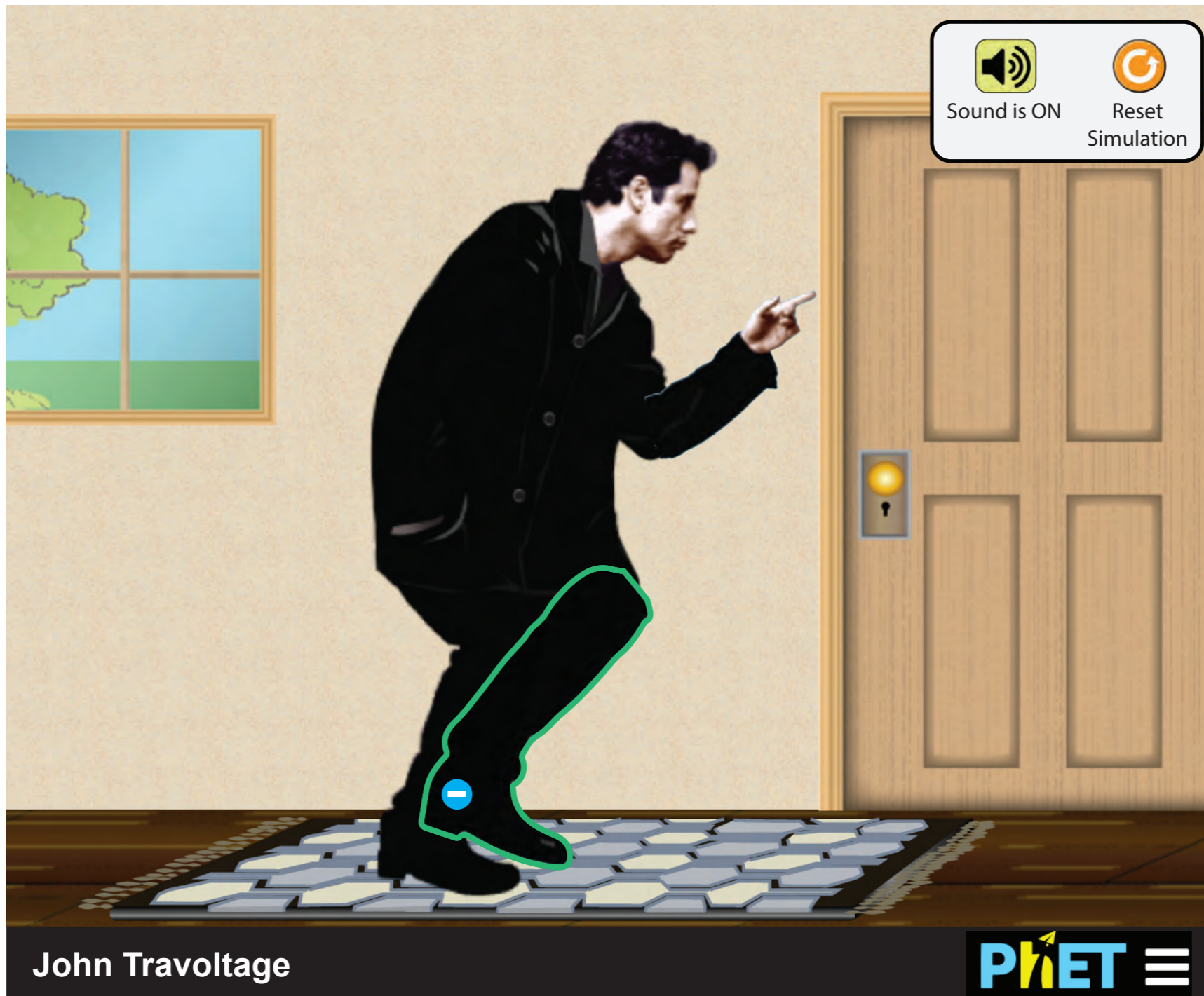
In fact, the leg is a slider in the markup and can be manipulated using the up/down and right/left arrows.

The user can speed up movement by pressing PgUp and PgDn.

The user can also drag the leg using mouse or gestures.

Faded left and right arrows are shown as a visual prompt, and disappear when focus is moved or movement starts. These arrows always appear on focus.

Leg being moved across the carpet causes an effect.



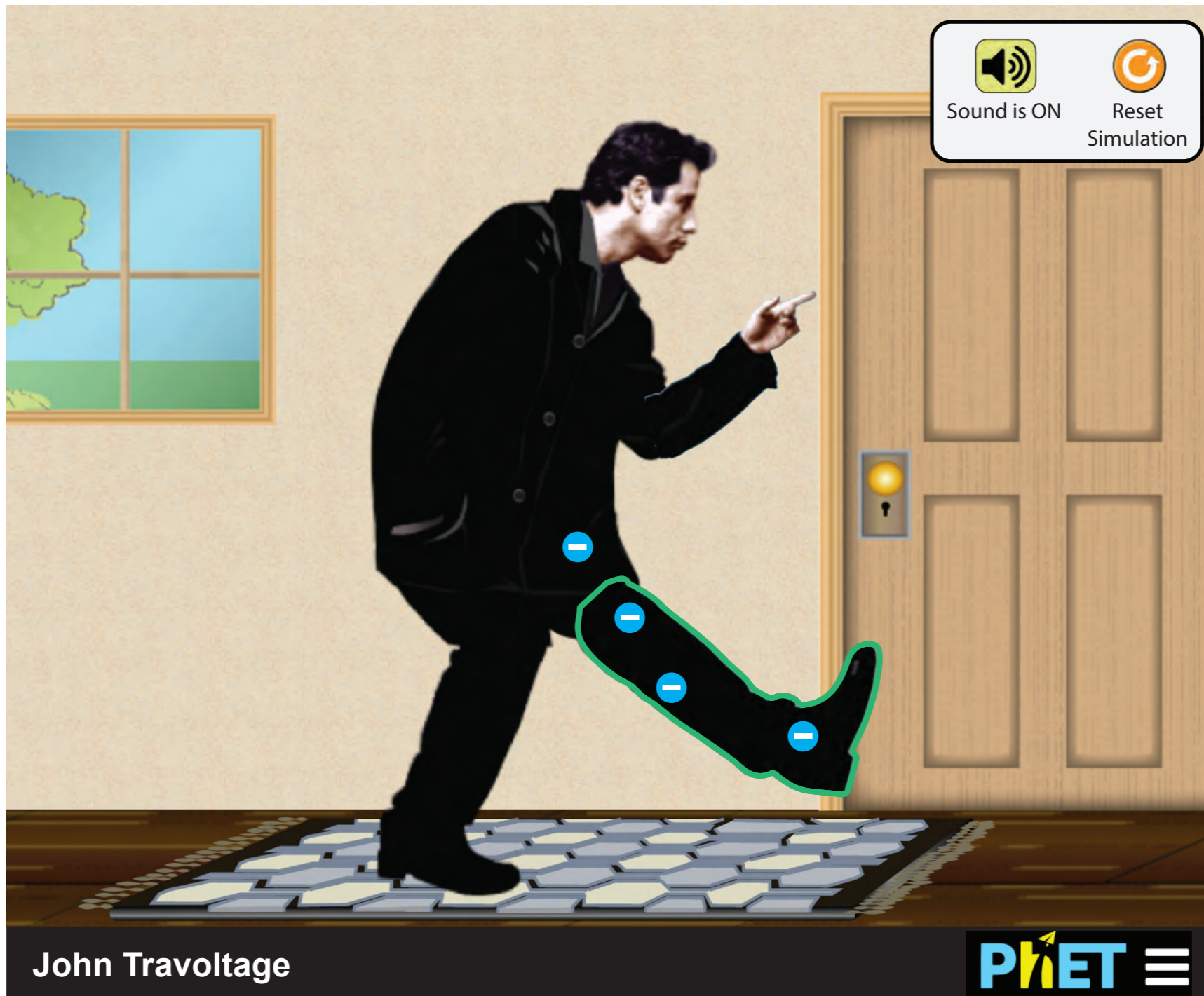
As foot moves across the carpet there will be brushing sounds.

There will be bubbling sound as electrons enter the body.

There are also accompanying text descriptions which get updated as the user interacts with the sim.

Left and right arrow prompts disappear when movement begins or when focus moves elsewhere..

Multiple charges have entered the body.



\*clinking glass sounds\* as electrons bounce around.

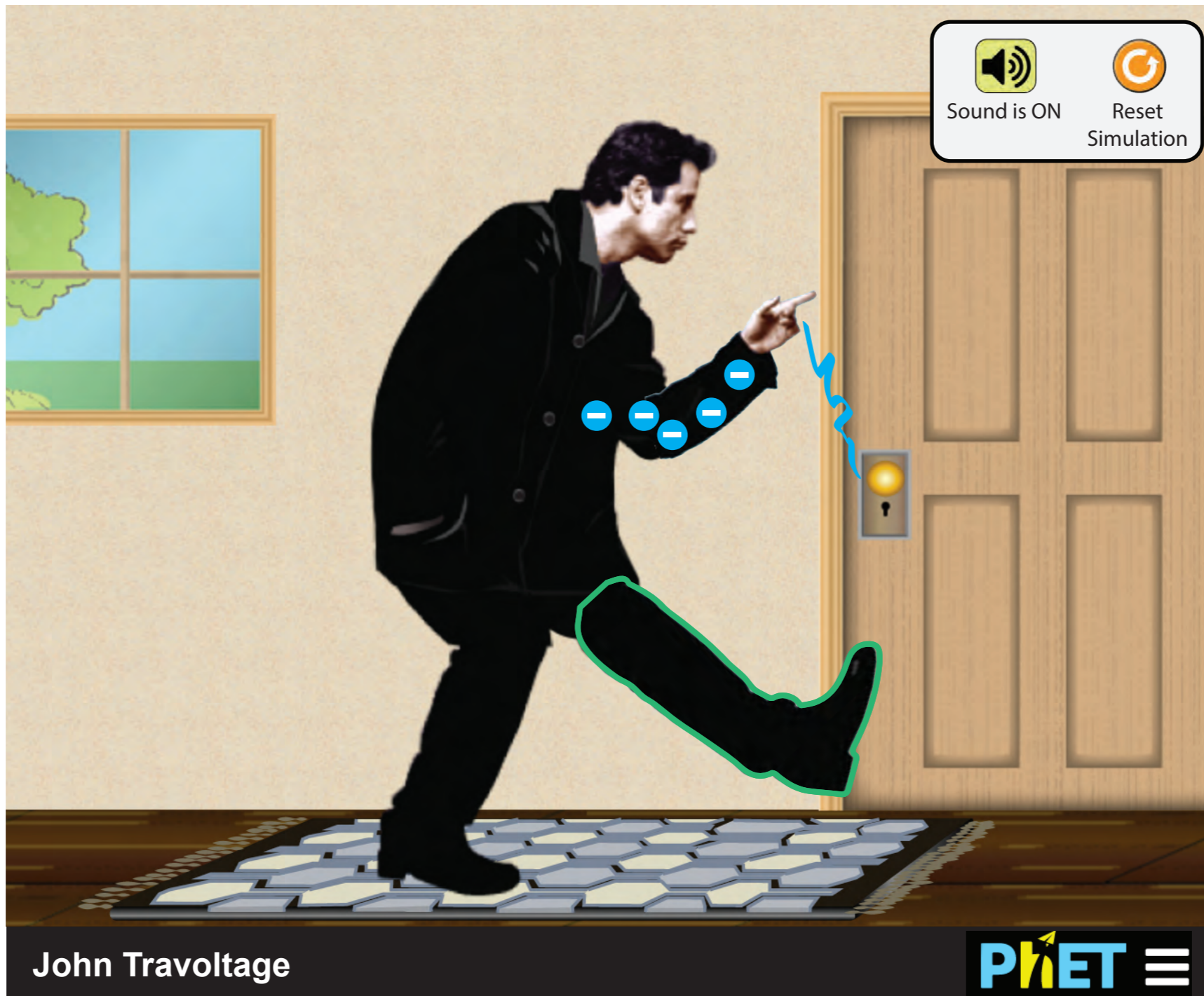
The sounds coincide with events happening visually like electrons colliding and bouncing off boundaries of the container.

Care must be taken that not too many sounds play simultaneously.

Visit the wiki for more discussion on this topic.

<https://wiki.fluidproject.org/display/fluid/PhET+John+Travoltage+Simulation+Design>

If there are enough charges, and finger is close enough - discharge happens.



As the electrons rush out of the body, there are rapid clinking sounds followed by a zap sound as the charges leave.

User presses tab - Second focus is the arm.



Similar to controlling the leg, the arm can be controlled using the arrow keys as it is implemented as an HTML slider as well.

Faded up and down arrows act as visual prompts when arm is initially focused, and disappears when arm is moved or focus changes.

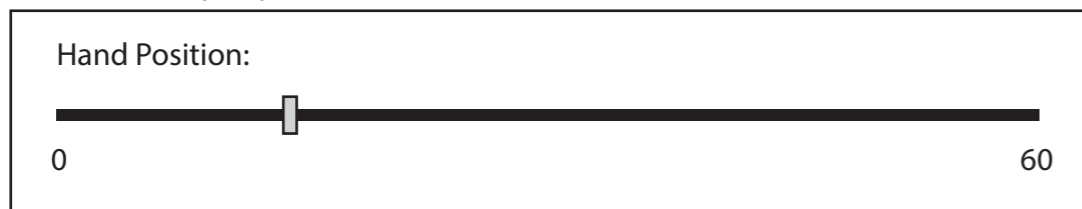
## Arm Movement

For the keyboard user, the arm is implemented as an HTML slider divided into 60 stops. Like a standard slider, the keyboard user can control the position by using:

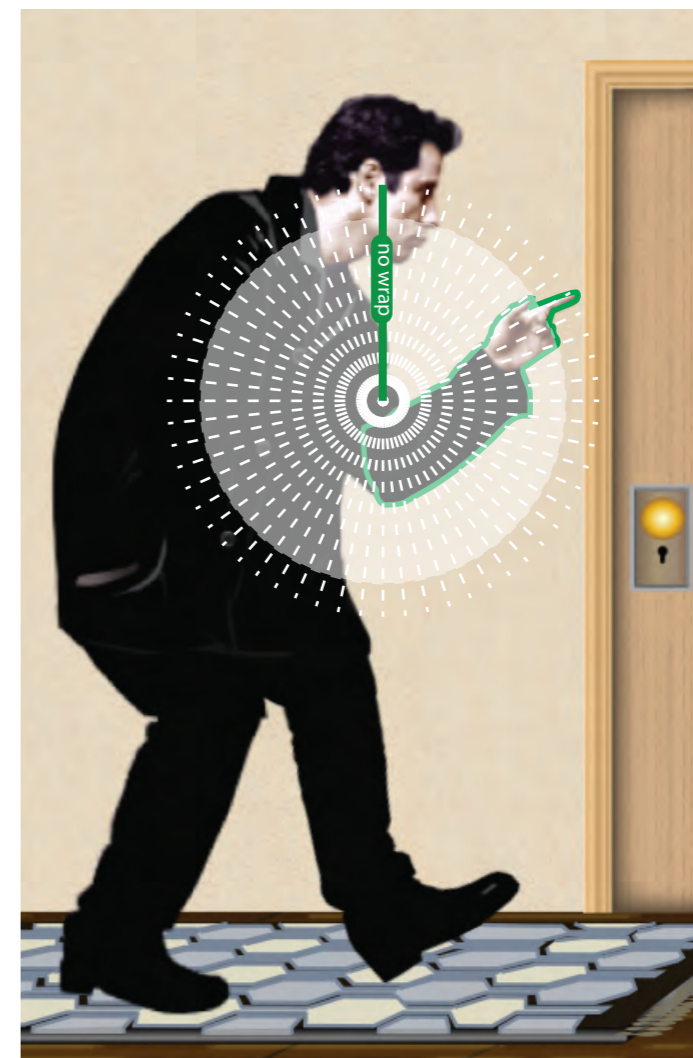
- Up / Right to go clockwise
- Down / Left to go counter-clockwise
- PgUp to go clockwise 5 stops
- PgDown to go counter-clockwise 5 stops

For the mouse user, the arm can be spun 360 degrees.

Screen reader perspective



Visual representation



## Arm Descriptors

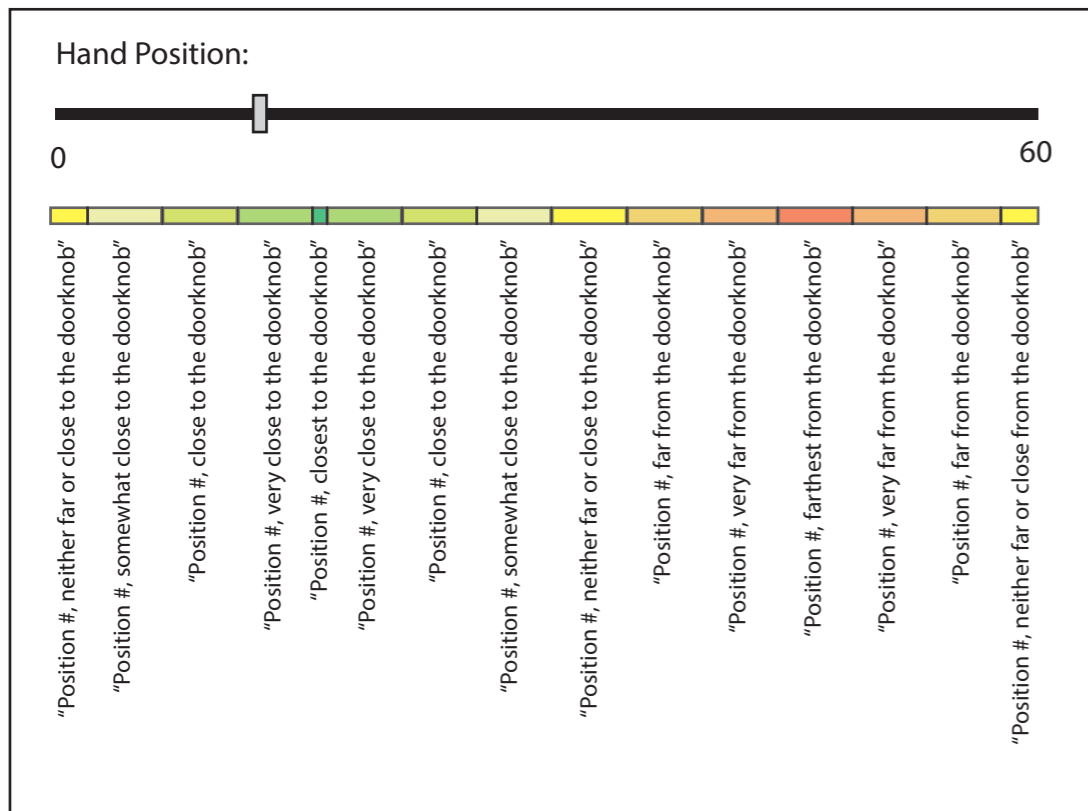
For an AT, as the user chooses a spot on the slider - a string describing the hand position will be read back. There are two key pieces of information in the description: the position number, and the general region the hand is in relative to the doorknob.

The position number is a value from 0 to 60.

The region is a general description of how close the hand is to the doorknob.

Additionally, as the arm moves, the description of the sim (the description located under the sim's first header) is updated to reflect the state of the sim.

Screen reader perspective



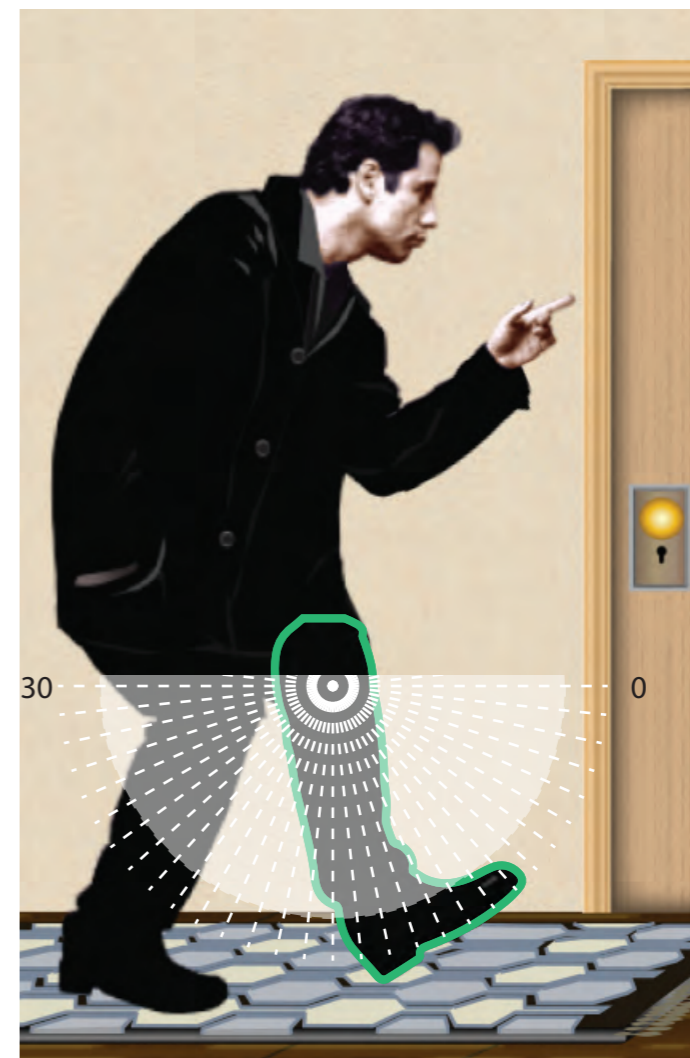


## Degrees of Leg Movement

For the keyboard user, the foot position is controlled by an HTML slider of 30 stops. Like a standard slider, the keyboard user can control the position by using:

- Up / Right to go clockwise
- Down / Left to go counter-clockwise
- PgUp to go clockwise 5 stops
- PgDown to go counter-clockwise 5 stops

Screen reader perspective



## Updating Leg Descriptions

For an AT, as the user chooses a spot on the slider - a string describing the foot position will be read back. There are two key pieces of information in the description: the position number, and the general region the foot is in relative to the rug.

The position number is a value from 0 to 30.

The region is a general description of how close the hand is to the rug (i.e. on or off the rug).

Additionally, as the leg moves, the description of the sim (the description located under the sim's first header) is updated to reflect the state of the sim.

Screen reader perspective

