



Waves

HOW TO CREATE YOUR ELEMENTS

STORAGE

The material needed for this box can fit in a shoe box.

CRAFT THE ELEMENTS

A. Create the wave paper structure

1. Follow the instruction in the Storytelling resources

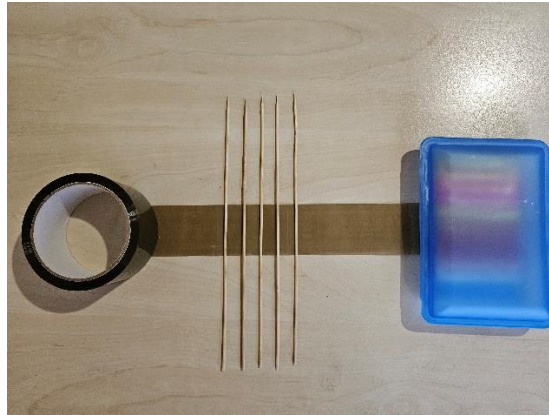
B. Create a wave

1. Take about 2m of duct tape, and place it on a table, sticky side is up. Use something to hold it in place (e.g. a book on each side).
2. Place wood skewers on it, so that they are parallel with each other, with about 1.5 cm of space between them. The centre of the skewers needs to be on the centre of the tape. You should leave about 10 cm on each side of the tape empty.

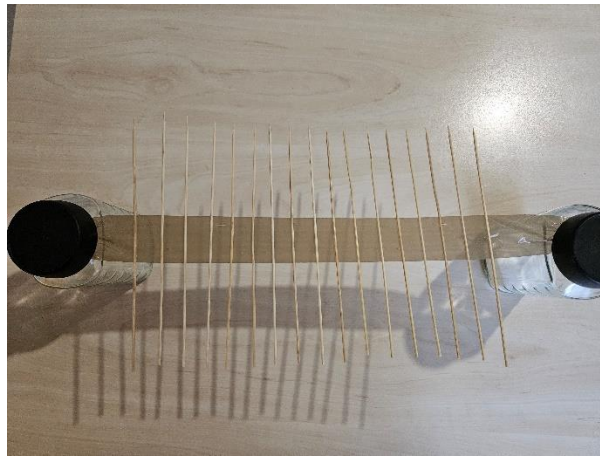


Co-funded by
the European Union

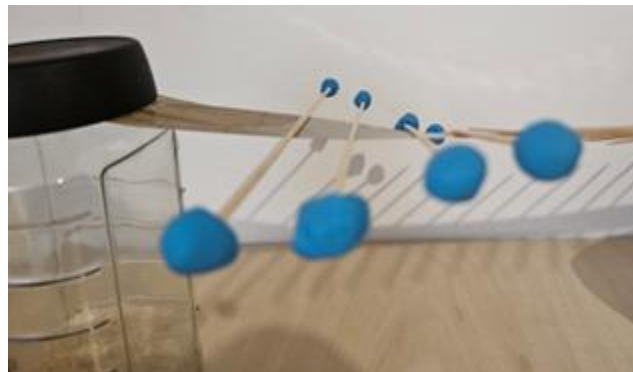
SCIENCE



3. Take the tape and, without rotating it, stretch and tape it on two objects (e.g. chairs), at a height accessible to the students.



4. Make same size balls of playdough and put them on each end of all skewers.
5. When you put playdough on all of the skewers, you will see if some ball is too big or small, as the skewers will tilt up or down. Make the adjustments if needed.



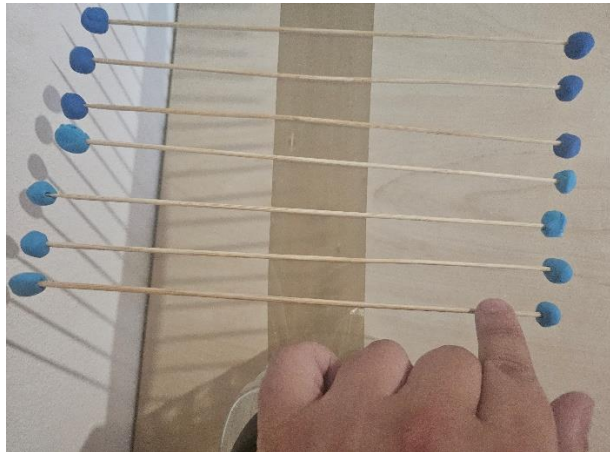
Co-funded by
the European Union

MY BOX OF STEAM (project nr. 2022-2-EE01-KA220-SCH-000099273) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SCIENCE

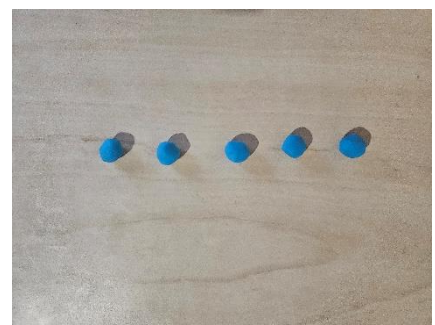
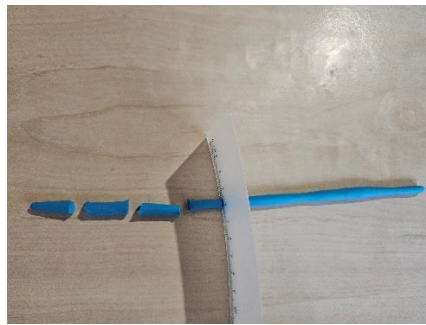
Note: This is a great place to let the students figure out by themselves what why the skewers are tilting, and how to fix it.

6. Tip the skewer at the end, and see a wave form, and travel back and forth from one end of the tape to the other.



POTENTIAL ISSUES

It can be relatively difficult for younger students to make balls of the same size. To make it simpler, you can tell them to make a “snake” by rolling the playdough thinly, and then cutting the same-sized pieces of it and rolling it into balls. You can use a ruler to measure the pieces, and also cut the dough with it. The students can also have different tasks, so that some of them make the snakes, some measure and cut the dough, while some make the balls.



Co-funded by
the European Union

MY BOX OF STEAM (project nr. 2022-2-EE01-KA220-SCH-000099273) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

ALTERNATIVES

A. Big wave

Instead of using the proposed size of the skewers and the length of the tape, you can try different options. This exercise is great to let the students experiment. What will happen if you use larger skewers, or if you combine larger and smaller ones? What if you use a really big piece of tape? There are no wrong answers, and if the experiment fails, it can be easily reiterated by simply cutting the tape or the skewers shorter or making the playdough balls bigger or smaller.



Co-funded by
the European Union