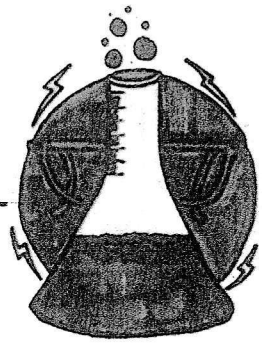
Full STEAM ahead for better education

Lesson plan

STEM in Münster: Teaching STEM with music and arts



Title: What is sound? – Exploring tones and noises

Aim	1st sequence: We explore/investigate tones and noises (What is "sound"?) The students should discover that we are only able to hear something if an object is very fast dangling, vibrating, swinging. If the swinging/vibration will be stopped the noise disappears. The students should also see that the tone/noise will be getting louder the more/stronger the object is swinging. 2nd sequence: Can the "dangle" move (around)? In different situations the students should see and get to know that the fast swinging/vibrating of an object can be transmitted. >> The "dangle" can move.
Tools I need	glass of water, rulers, tabour, triangle, baking paper, tuning fork, drinking glasses filled with water, "rubber guitar", balloons, CD player, sand, beater/stick, candle, matches, "sound canon".
Preparations	The different experiments and the required equipment and materials will be arranged on the team desks.
What to do	The students work at different stations/stops. The teacher puts some materials in the middle and explains the experiments, the different stations and the line of action. Reflection: The students describe/tell their observations/sightings. Gathering/working the results out.
What I get / results	In the stage of experiments the creating of "sound" is emphasized. The students discover that "sound" depends on the fast swinging, the vibration of objects. By trial and error they find out how to create loud and silent tones and what happens to the object. In different situations the students experience that fast swinging/vibration of an object can be transmitted to other objects. Experiments at different stations deepen this experience.

The STEAM approach:

S	Search	The students should discover what "sound" is, examine tones and noises. In different situations they should get to know that the swinging/vibrating of an object can be transmitted to other objects.
T	Think	The given way of looking at a problem with experiments at different stations and the line of action keeps up the students´ curiosity.
E	Experience	The students discover at the different stations what "sound" is and if it can be transmitted.
A	Active learning	The students work together in teams and execute together the different experiments one after the other.
M	Motivation	The arrangements of the different stations and the given materials are very motivating for the students.

Ressources / Links:	Spectra Material : Klassenkiste: ,,Schall, Was ist das?" class box: "Sound, what is it?"