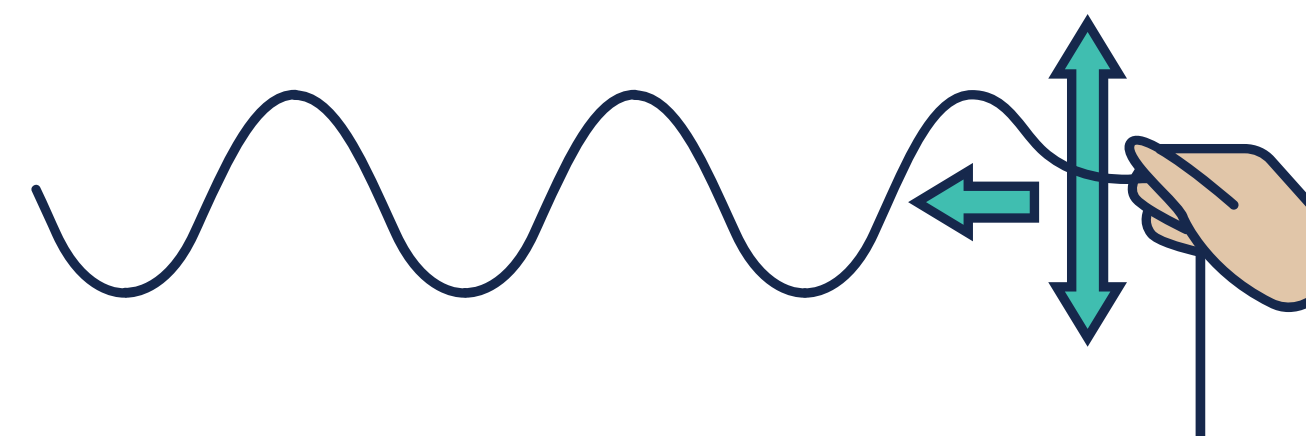
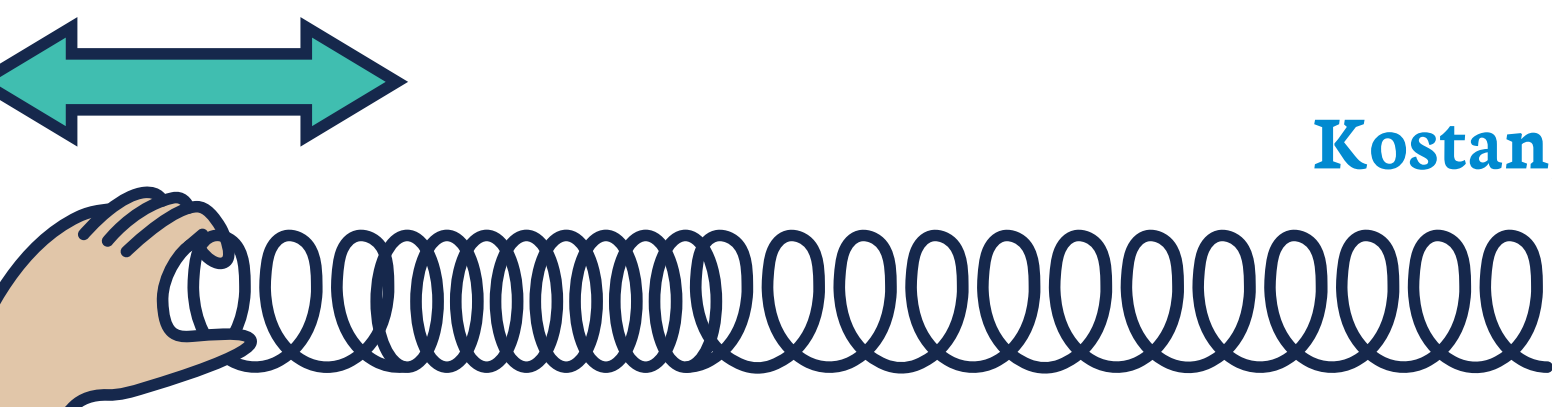


Od ideje do zvoka:

**uglašene cevi kot primer
trajnostnega in izkustvenega poučevanja fizike**

**Barbara Sivec Urbanč,
Srednja šola tehniških strok Šiška**

Kostanjevica na Krki 30.5.2026

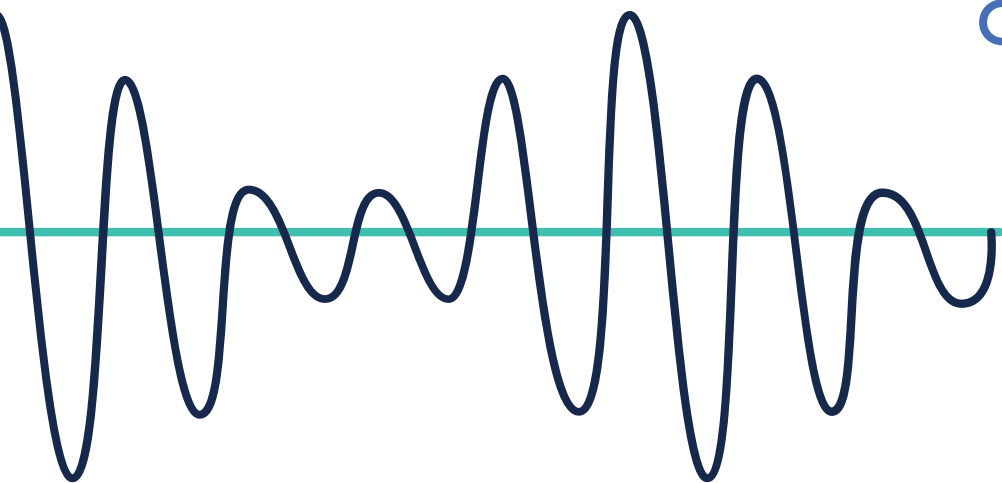
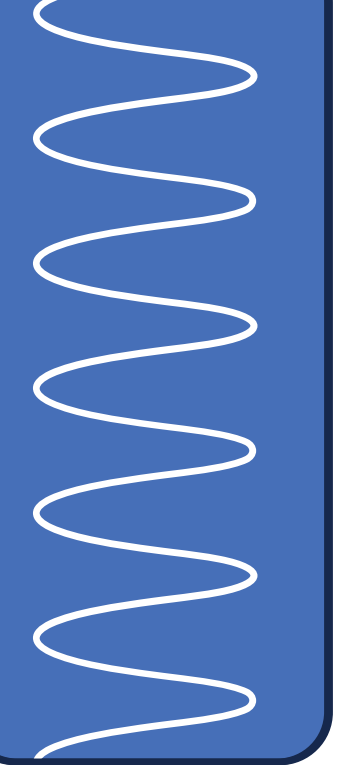
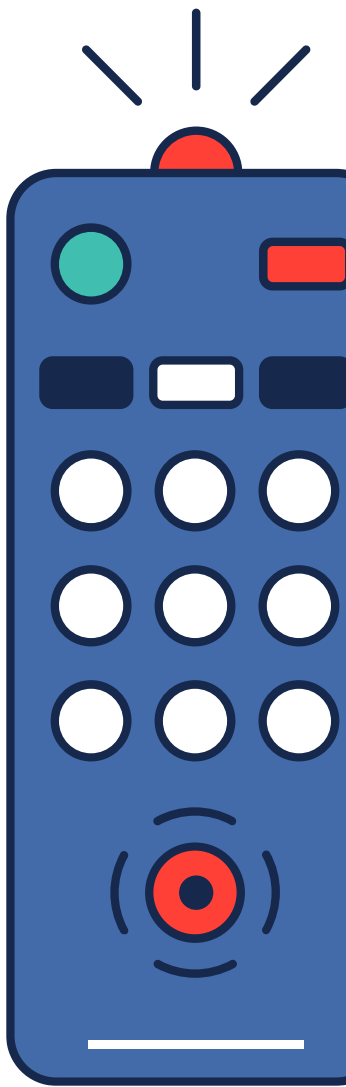
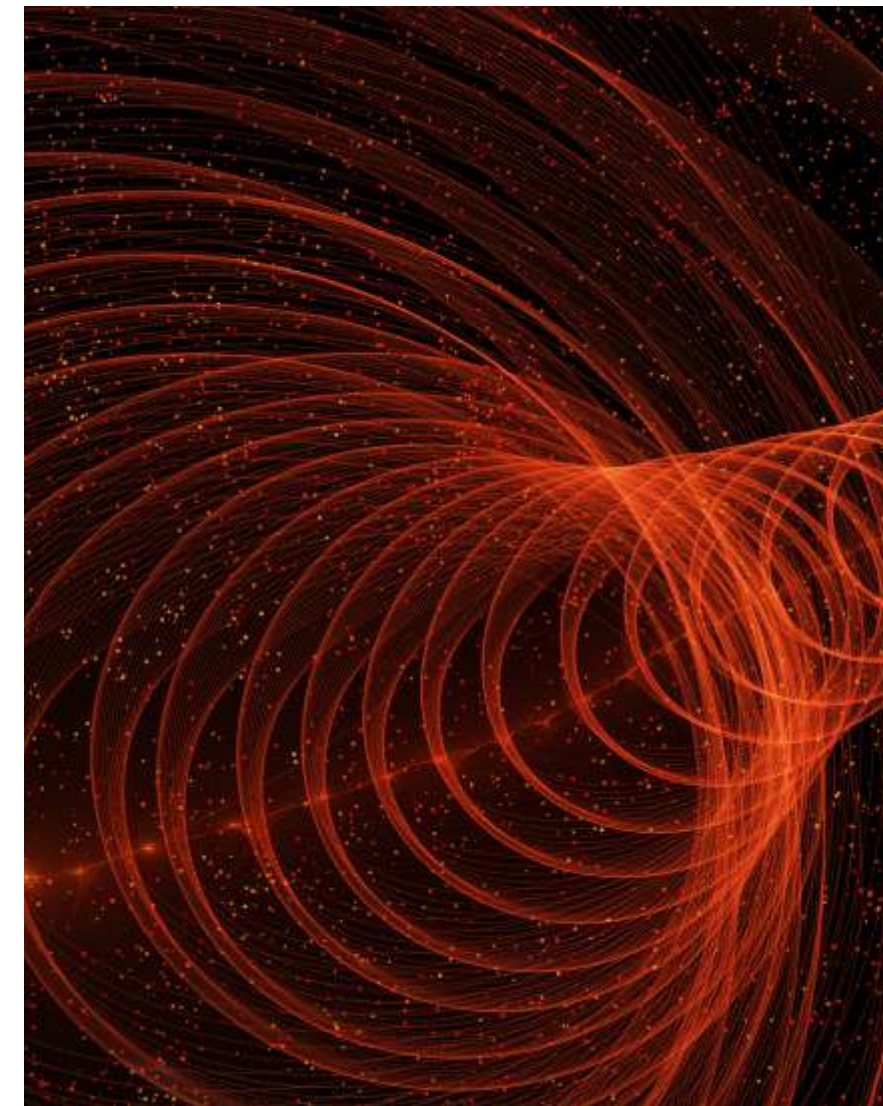


Zakaj ravno zvok?

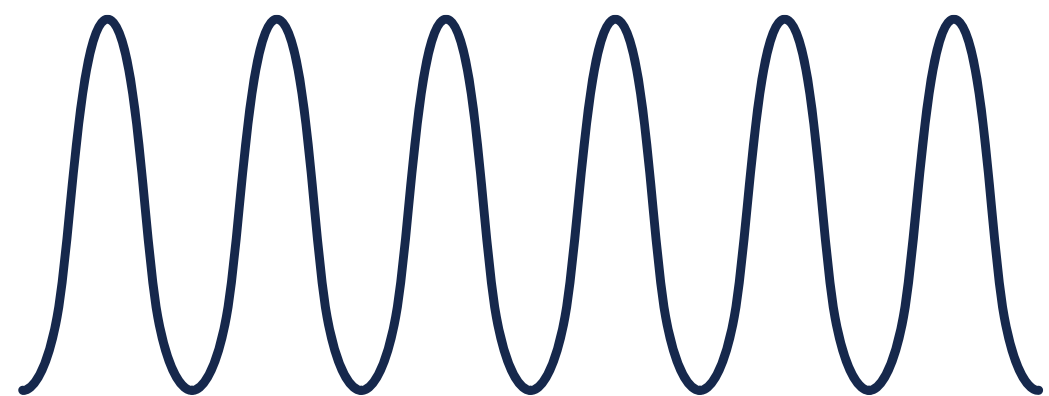
- abstraktni pojmi
- nizka motivacija dijakov
- potreba po aktivnem učenju

Kako narediti fiziko:

- razumljivo
- doživeto
- trajnostno



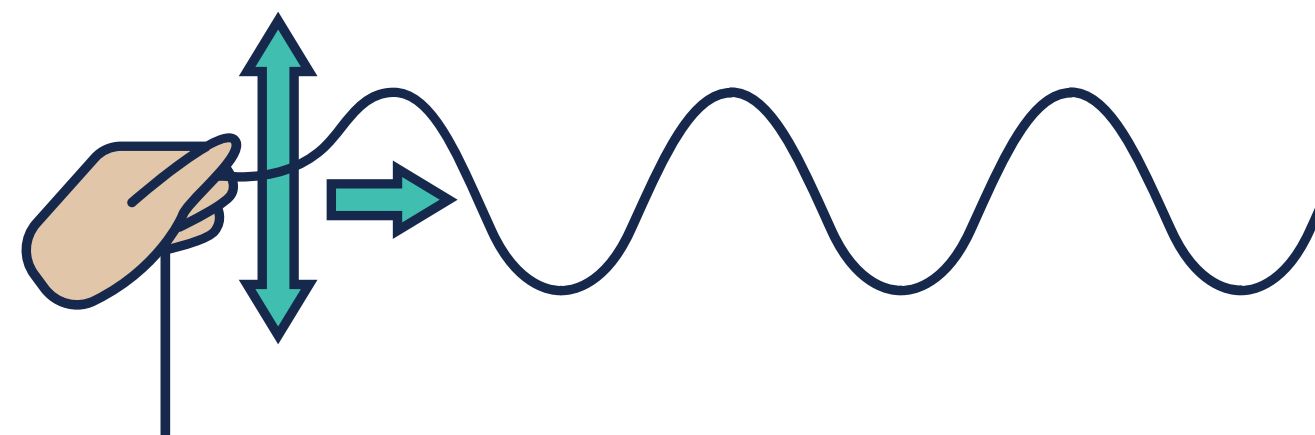
Uglašene cevi - fizika v praksi



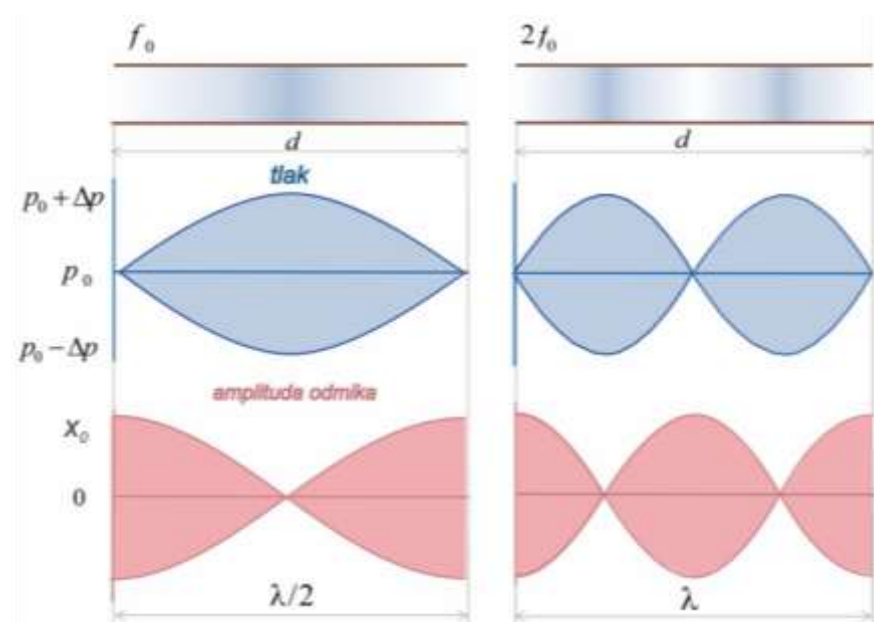
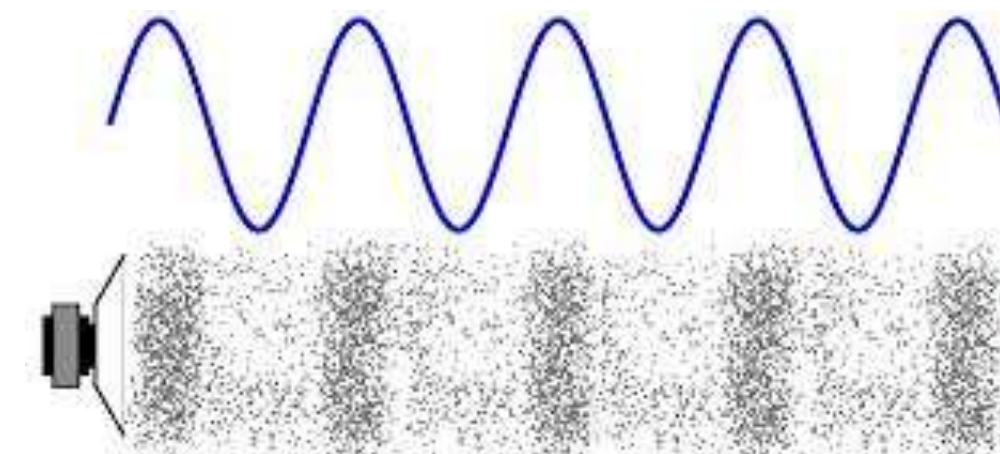
- stoječi valovi
- resonanca
- višina tona

Kaj smo želeli doseči

- razumevanje fizikalnih pojmov
- aktivno sodelovanje
- raziskovalni pristop
- trajnostna naravnost



Od ideje do izdelka

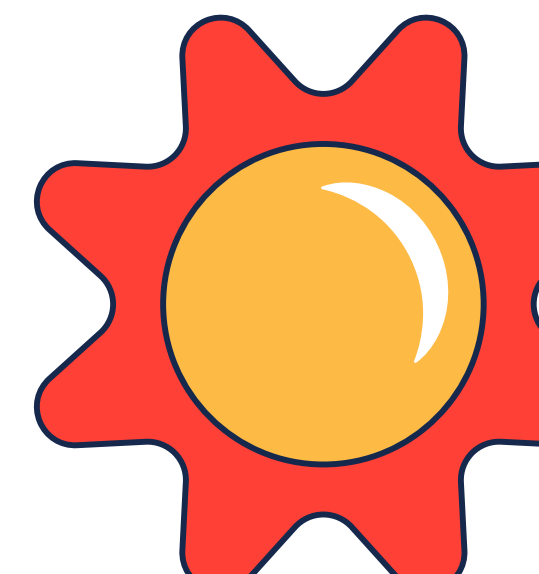
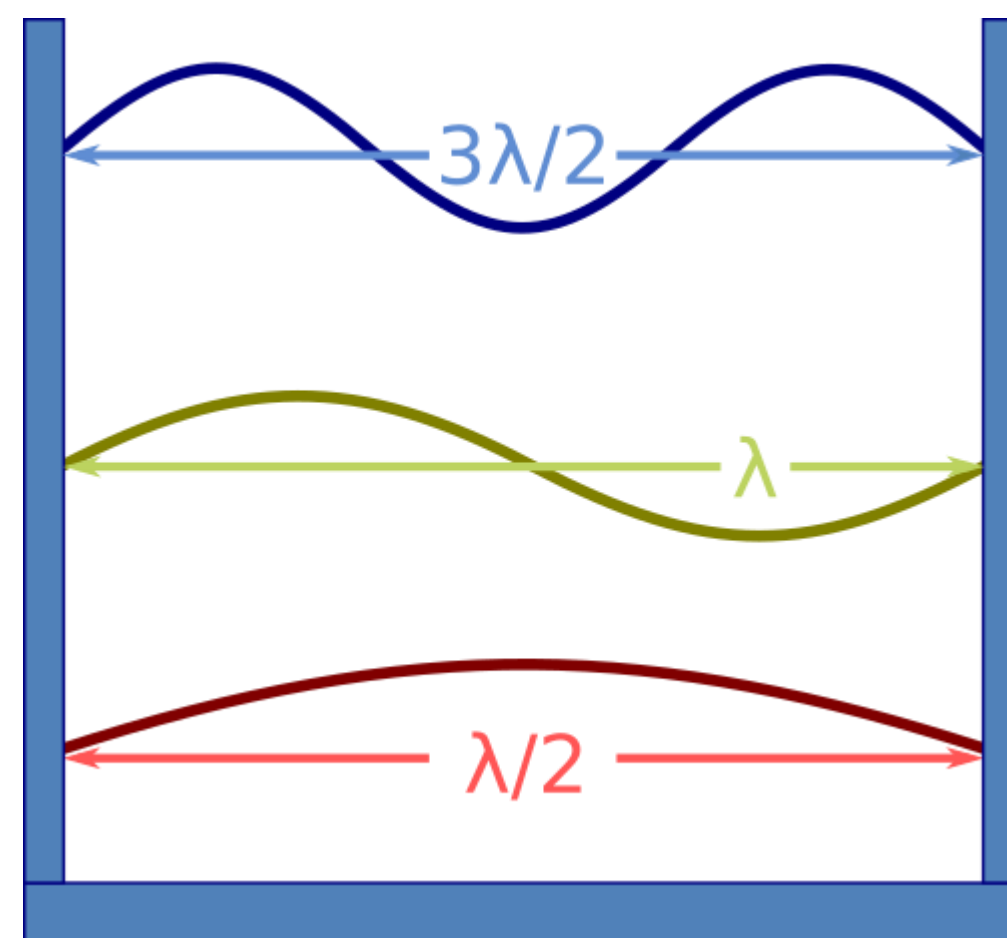


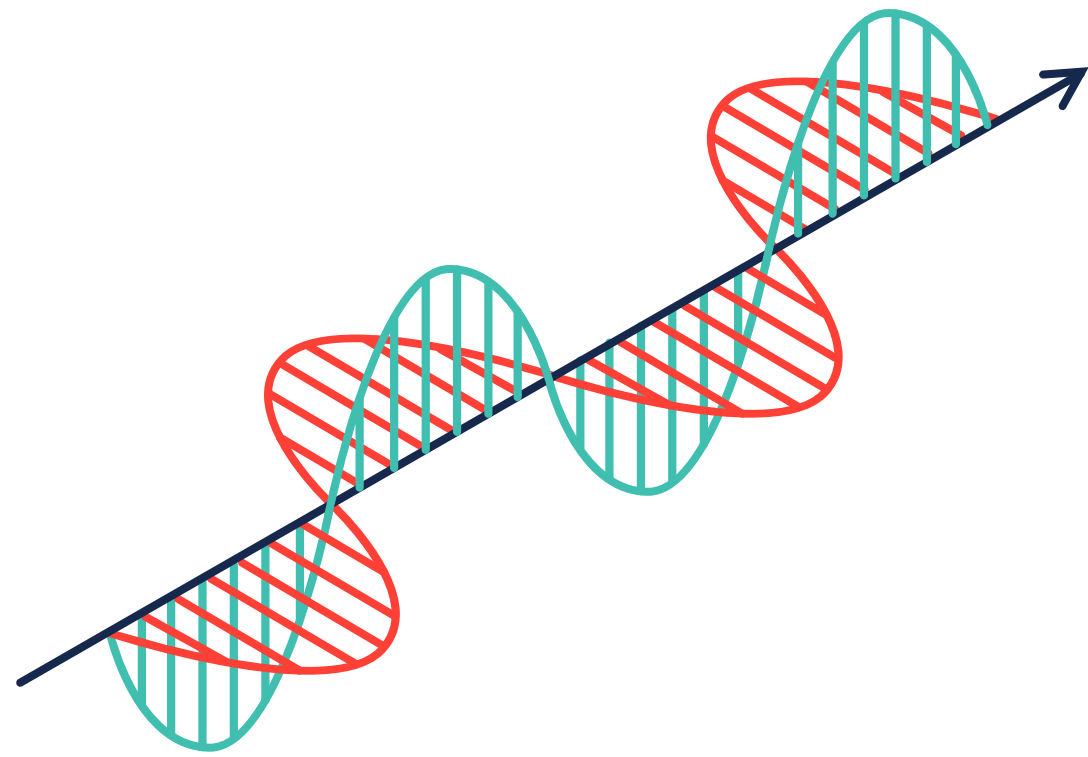
- merjenje
- rezanje
- označevanje

Preverjanje teorije

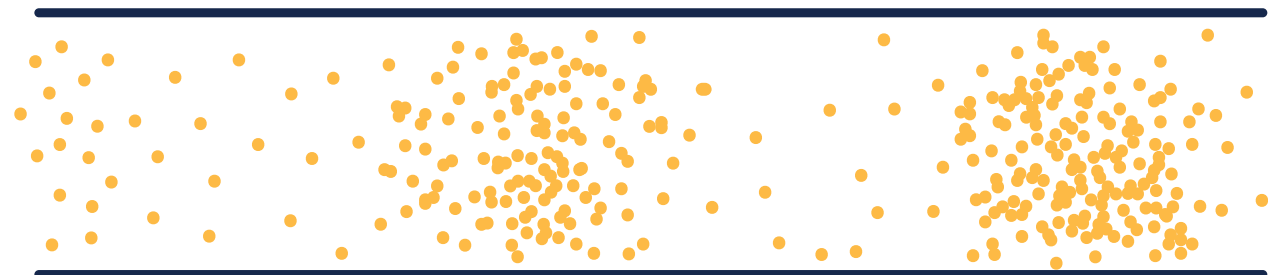
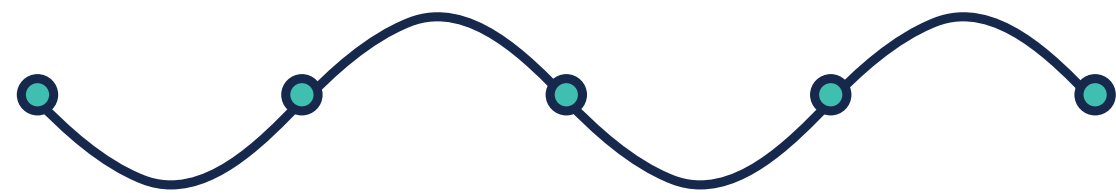
- mobilne aplikacije
- primerjava rezultatov

$$f = c / (2 \cdot L)$$





Učinki na dijake

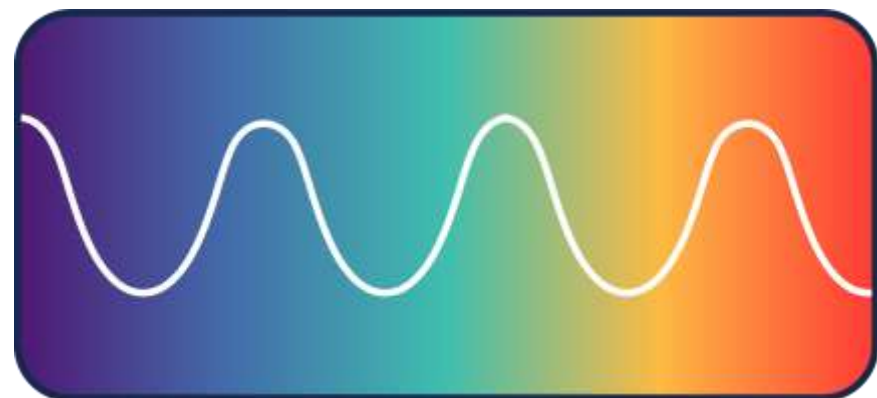


Kaj so pridobili

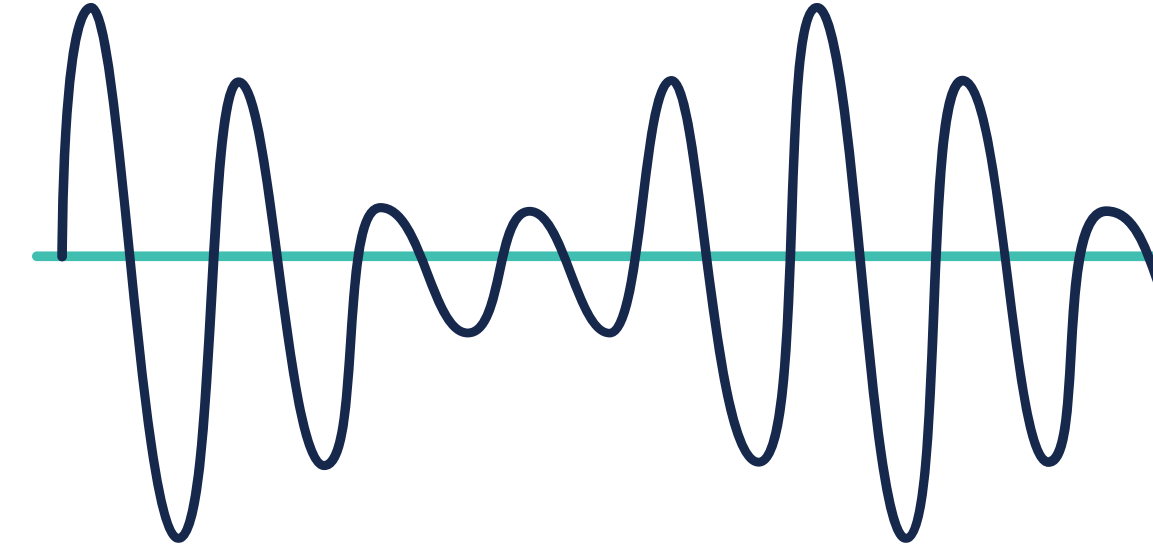
- boljše razumevanje
- večja motivacija
- ponos na izdelek

Inovativnost

Zakaj je dejavnost drugačna

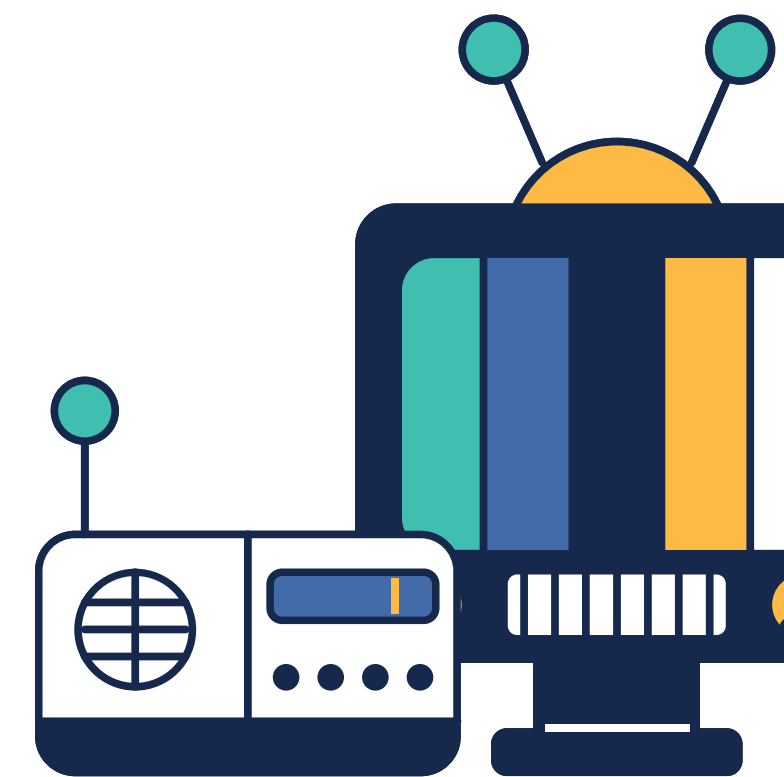


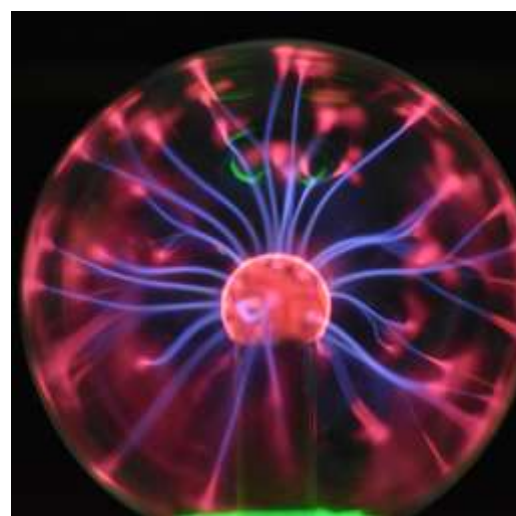
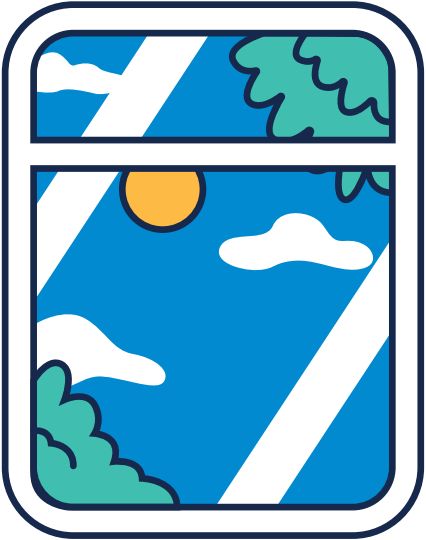
Prenosljivost



Uporabno tudi drugje

- druge starosti
- drugi predmeti
- različni materiali

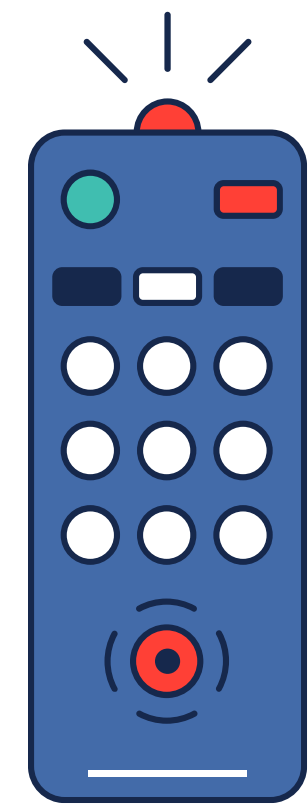
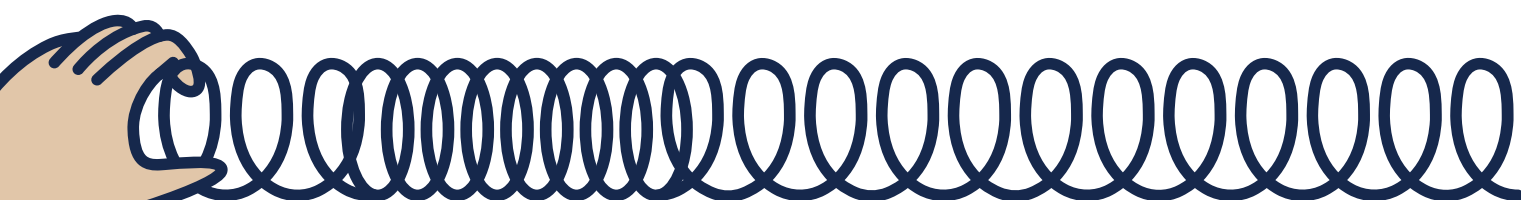




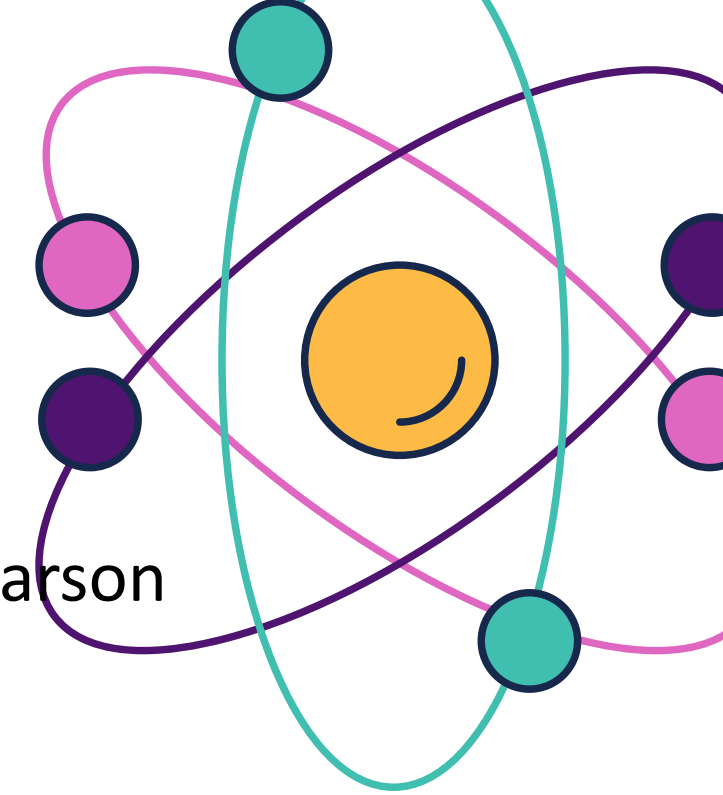
Mentor, ne izvajalec

Kaj bi še izboljšali

Trajnost kot del pouka

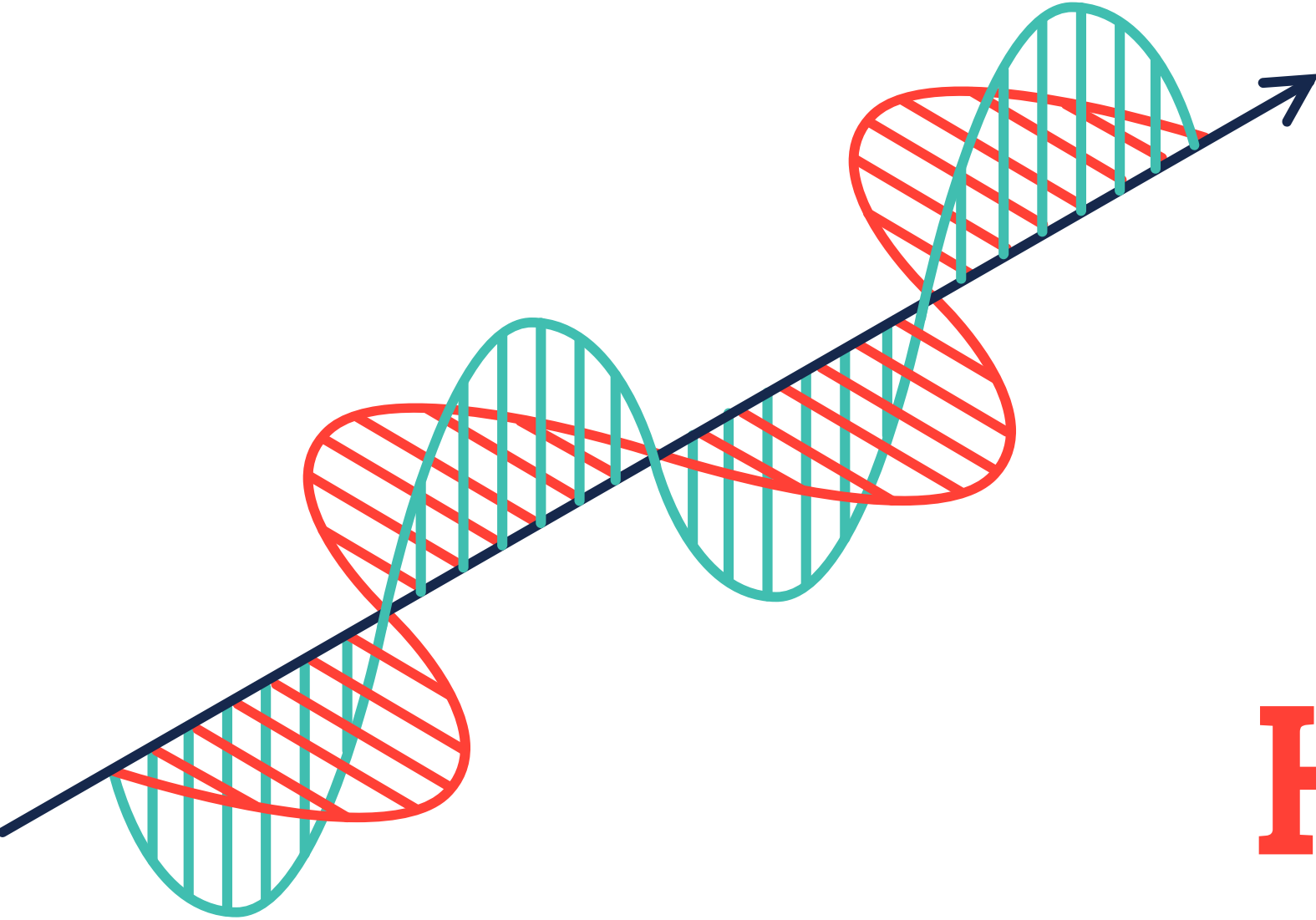


Viri in literatura:



- Kolb, D. A. (2015). *Experiential learning: Experience as the source of learning and development*. Pearson Education.
- OECD. (2019). *Future of education and skills 2030*. OECD Publishing.
- UNESCO. (2020). *Education for sustainable development: A roadmap*. UNESCO.
- Kolb, David A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.
- Dewey, John (1938). *Experience and education*. Macmillan.
- Piaget, Jean (1970). *Science of education and the psychology of the child*. Viking Press.
- UNESCO. (2017). *Education for sustainable development goals: Learning objectives*. UNESCO.
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations.
- Serway, Raymond A., & Jewett, John W.. (2014). *Physics for scientists and engineers (9th ed.)*. Cengage Learning.
(če uporabljate drugo izdajo, prilagodite letnico in izdajo)
- Halliday, David, Resnick, Robert, & Walker, Jearl. (2014). *Fundamentals of physics (10th ed.)*. Wiley.
(spet lahko prilagodite izdajo)
- American Association of Physics Teachers. (n.d.). *Resources for physics teaching*. <https://www.aapt.org>





**Hvala za vašu
pozornost.**

