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IVANČNA GORICA

EXPLORING PROPERTIES OF GASSES WITH EXPERIMENTS AND COMPUTER SIMULATIONS

DR. ANDREJA ERŠTE

SREDNJA ŠOLA JOSIPA JURČIČA IVANČNA GORICA
SLOVENIA

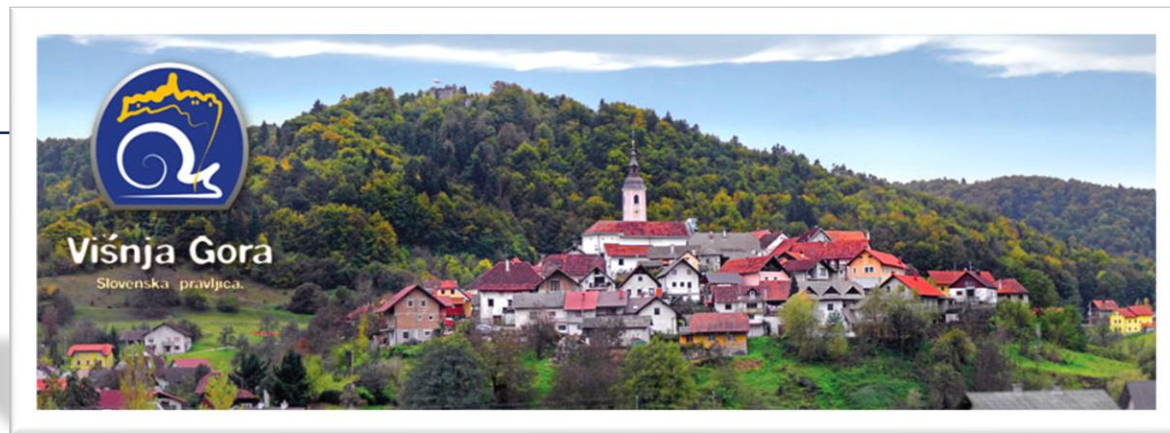
28th International Conference on Multimedia in Physics Teaching and Learning (MPTL'28)



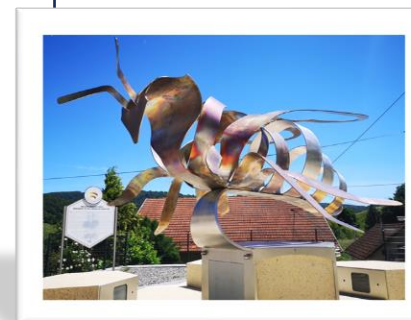
MY REMOTE LOCATION IN SLOVENIA



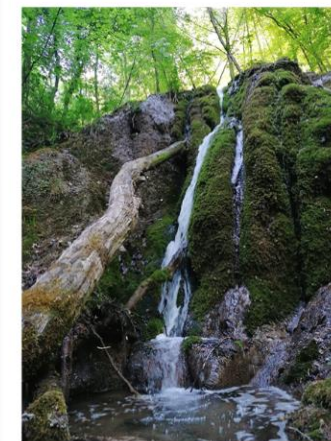
Dolenjska



Home of the
Carniolan Bee



Kosca Waterfall



Municipality of Ivančna Gorica



Stična
Monastery



Srednja šola
Josipa Jurčiča
Ivančna Gorica



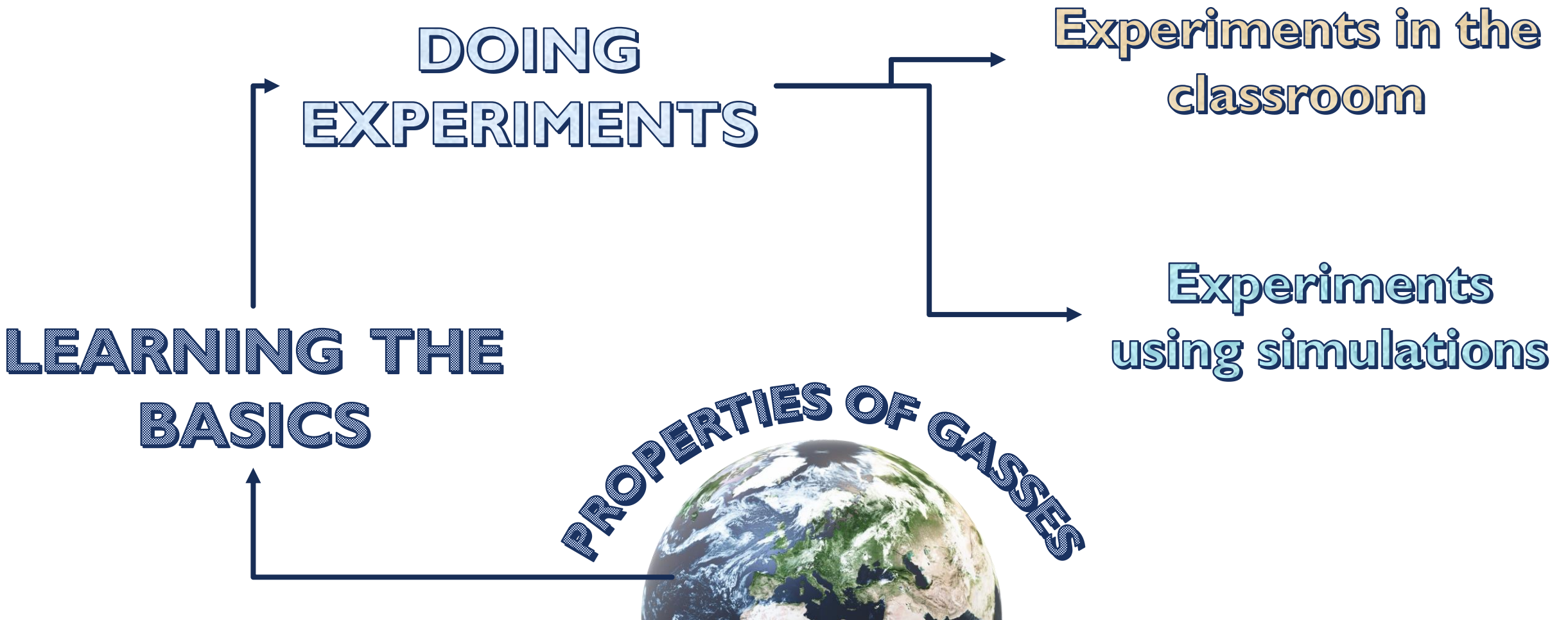
Jurčič
homestead



River Krka
spring and
Krka Cave



MOTIVATION: TEACHING PROPERTIES OF GASSES





LEARNING ABOUT GASSES

**2nd year
high school
Students**

**Programme:
gymnasium**

**Subject:
PHYSICS**

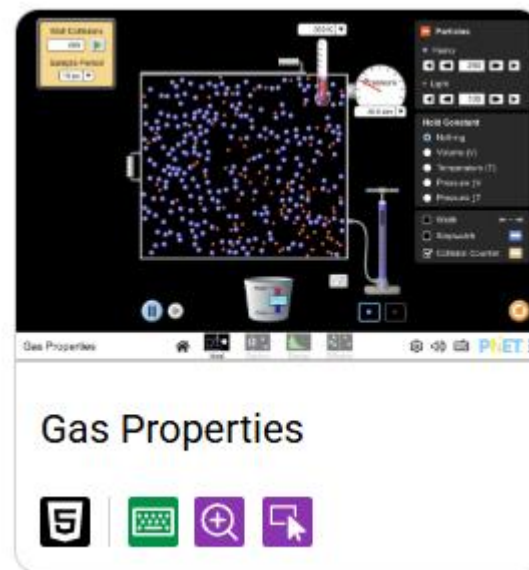
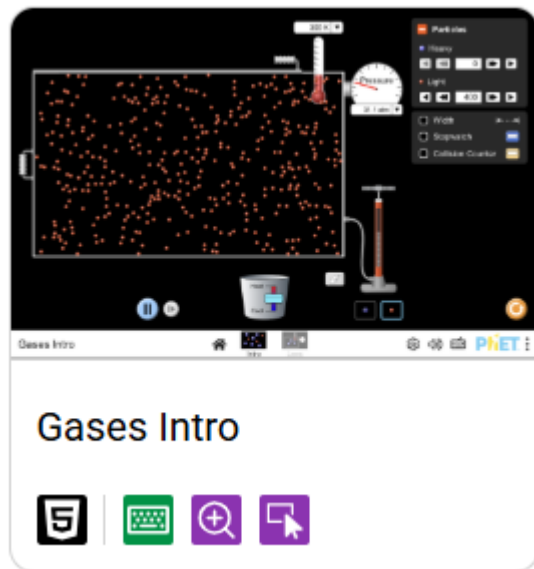
**Interdisciplinary
connections:**

- ✓ **Chemistry**
- ✓ **Biology**
- ✓ **Computer
Science**

INTERACTIVE SIMILATIONS

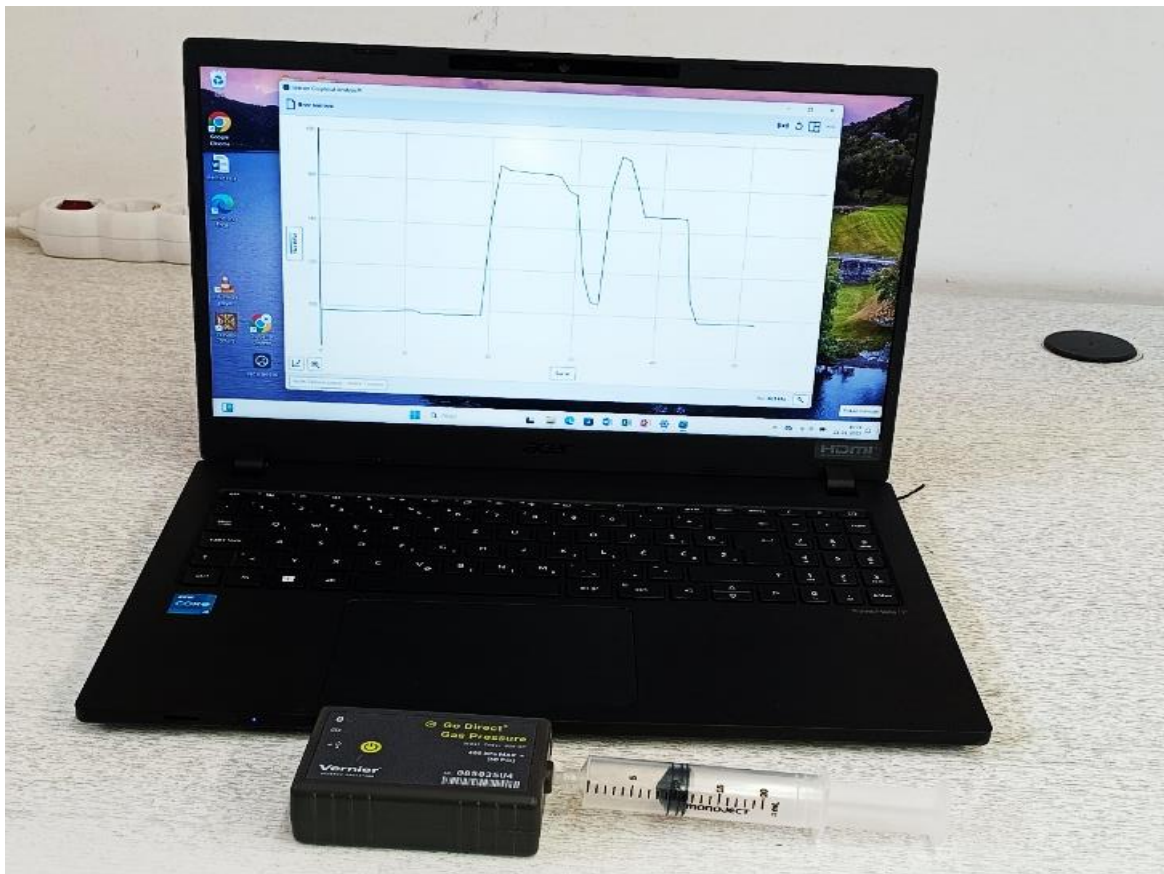


<https://phet.colorado.edu>



USEFULL TRICK: change letters at the end of a simulation link to a language short and you can change the language. (HU – Hungarian, SL – Slovene, DE – German,...)

EXAMPLE: ISOTHERMAL LAW



EXPERIMENTAL TASK:

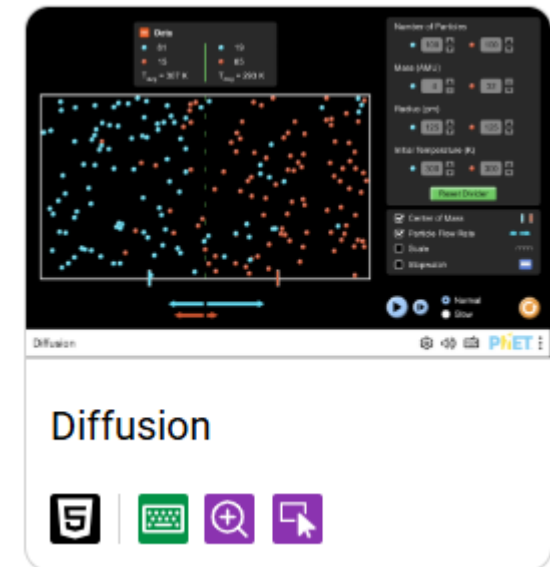
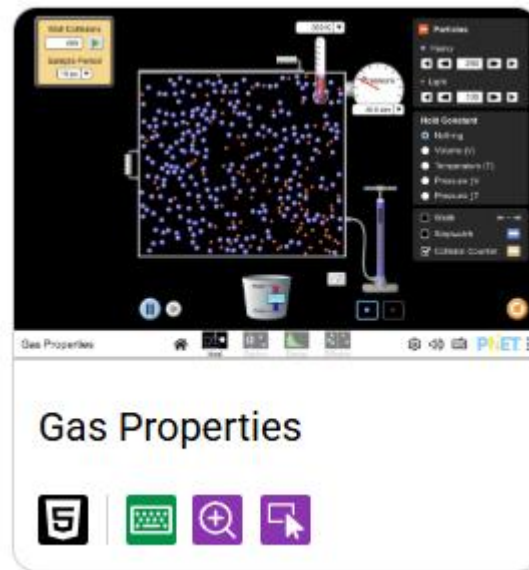
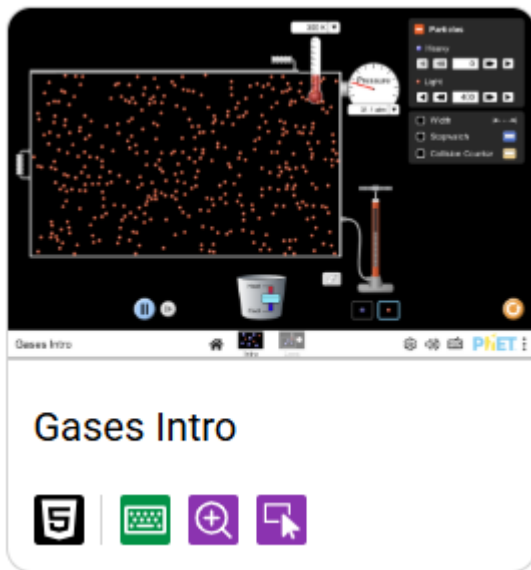
Using a syringe and Vernier Sensors make measurements of air pressure at 8 different volumes. Repeat the experiment three times. Analyze your data and:

- ✓ Draw $p(V)$ graph and analyze the curve.
- ✓ What is the meaning of the curve in the graph? Explain your observations.
- ✓ Using the graph, determine the mass of gas inside the syringe.

INTERACTIVE SIMILATIONS



<https://phet.colorado.edu>



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TASK: EXPLAIN FUN EXPERIMENTS AND VIDEOS WITH GASSES

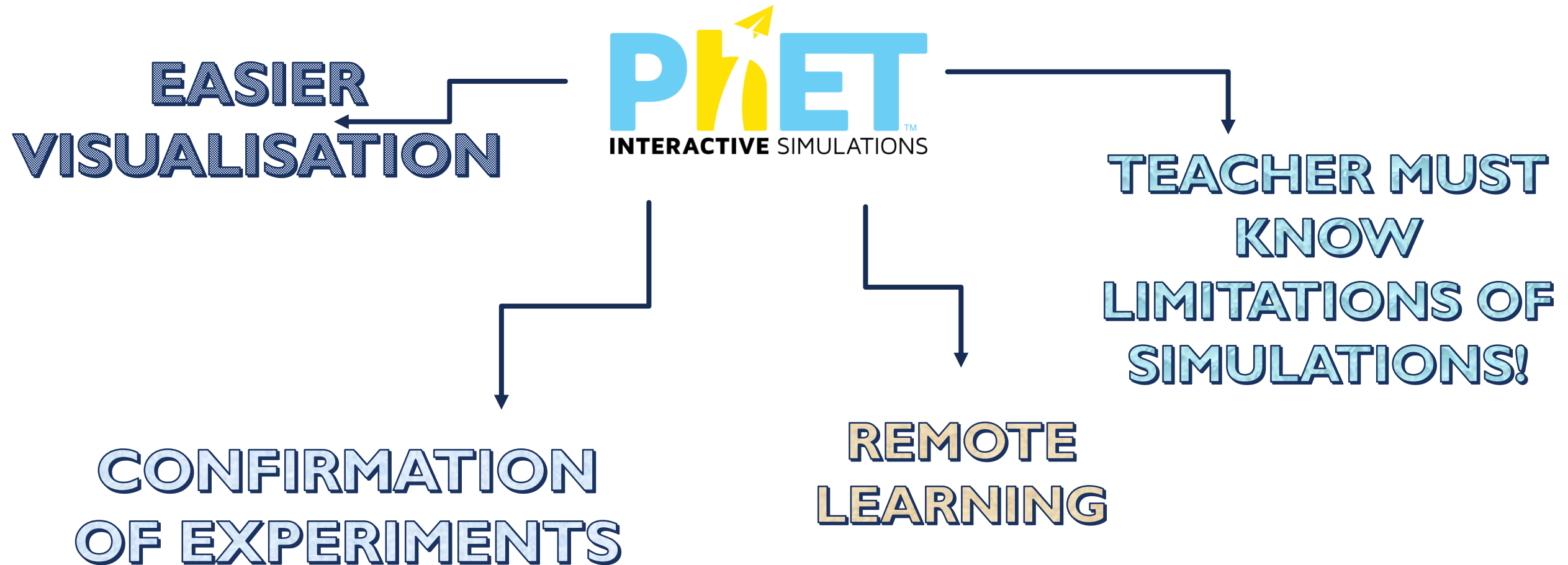


Video source: www.youtube.com/davehax



Video source: Eršte, Rožič, e-gradiva <http://fizika.sc-nm.si>

CONCLUSIONS



THANK YOU !

GOT ANY BURNING QUESTIONS?

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