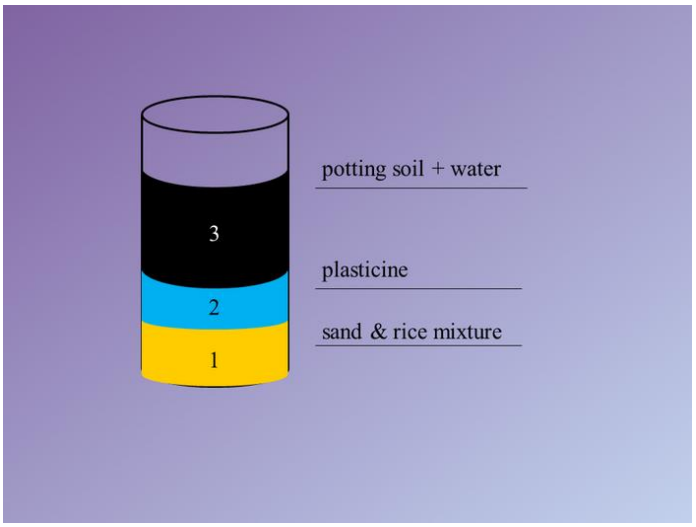
# WORKSHEET 2

You already know what tundra profile looks like and what are permafrost and active layer. Let's try to do an experiment to observe how the temperature affects the model tundra soil profile.

What to prepare:

- *one big glass/jar*
- *potting soil*
- *sand*
- *rice*
- *plasticine*
- *water*




What you need to do next? Look at the picture and follow the instruction.

1. Mix sand and rice in proportion 1:1 and put into glass/jar. That imitates the soil layer.
2. Make another layer from plasticine. Put it well and smooth trying to stick the layer edges tightly to the glass/jar walls. That would be a permafrost layer.
3. Final stage is to mix potting soil with water. The whole mixture need to be a little bit muddy. Pour it gently onto plasticine. It makes an active layer.

*Here we go! Let's perform the other steps of the experiment:*

4. Put the glass/jar into freezer for 24 hours.
5. Take the glass/jar out of the freezer and put it into the fridge for next 24 hours.
6. Take the glass/jar out of the fridge and keep it in safe place in room temperature for another 24 hours.
7. Repeat steps 4-6 three times (steps 4-6 is one cycle; you need to do that part of the experiment in three cycles).

*Make notes during the experiment. Use the worksheet below.*

Project office: Księcia Janusza 64, 01-452, Warsaw, Poland edu-arctic2.eu **edukacja@igf.edu.pl**
EDU-ARCTIC 2: from polar research to scientific passion – innovative nature education in Poland and Norway receives a grant of ca. 240 000 EUR received from Iceland, Liechtenstein and Norway under EEA funds. The purpose of the EDU-ARCTIC 2 project is to: enhance the knowledge about nature, geography, natural resources, political specificities concerning polar regions and increase awareness of environmental issues and climate change, increase of interest in pursuing STEM education and careers due to enhancement of knowledge about scientific research, and their place in the modern world, familiarizing young people with scientific career opportunities; introduce innovative tools by way of an e-learning portal and effective methods of teaching science in schools.

| | | FREEZER | FRIDGE | ROOM |
|---|---|---|---|---|
| 1st cycle | Temperature | | | |
| | Notes | | | |
| 2nd cycle | Temperature | | | |
| | Notes | | | |
| 3rd cycle | Temperature | | | |
| | Notes | | | |

**Final conclusions** (TIPS: look what happened to the "active layer" surface, what role plays "permafrost"):

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....