TEMPLATE for BEST PRACTICE EXAMPLES

1. **Name of the project:**
   Cloud in a Jar

2. **Subjects covered from STEAM areas:**
   Science, Technology, Engineering

3. **Target group (age range and size of the group):**
   8-12 years old, unlimited group size

4. **Duration of the activity:**
   30 minutes

5. **Keywords:**
   condensation, particles, cloud

6. **Key sentence describing context of the activity, followed by short description (200 words):**
   Making a cloud in a jar by combining smoke and water with some air pressure changes

   A cloud is formed when water vapor condenses into water droplets that attach to particles (of dust, pollen, smoke, etc.) in the air. When billions of these water droplets join together, they form a cloud.

7. **Description of the activity environment, including the list of materials and tools needed:**
   Environment: classroom
   Materials and tools:
   - jar
   - match
   - balloon with the bottom cut off (so it can be placed as a “lid” on top of a jar)
   - warm water
   - flashlight

8. **Step by step, detailed description of the activity, including teaching and learning strategies:**
   1. Pour enough warm water into your jar to cover the bottom 1.5 cm of the jar.
   2. Light a match, then hold the lit end in the jar for a few seconds to allow smoke to enter the jar. Then remove the match (or you can simply drop it into the jar – the flame will extinguish when the match hits the water).
   3. Quickly cover the opening of the jar with the cut balloon.
   4. With this next step, the goal is to change the air pressure in the jar by gently pushing and releasing the balloon. With your finger, gently push the balloon into the jar a little bit

to increase the air pressure in the jar. Then release. As you release, you should notice a cloud instantly form inside the jar. You may want to shine a flashlight at the jar to help you see the cloud more clearly.
5. Repeating the pushing and releasing of the balloon several times will make more clouds.

9. **Learning objectives/competencies:**
condensation, air pressure change, condensed water collecting smoke particles

10. **Evaluation/Assessment guidelines:**
How does pushing and releasing faster or slower change the size and the shape of the clouds?

11. **Lessons learned:**
Balloon has to seal the jar properly! Make sure the balloons are “fresh” so they stretch nicely.
Make sure you cover the jar very quickly. Be gentle as you push and release the balloon to ensure that the balloon does not come off the top of the jar.

12. **Additional information/Links:**
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13. **Contact person:**
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