

# Drops falling from the clouds - learning how rain is formed

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| <b>1</b> | <p><b>Overall aims:</b></p> <ul style="list-style-type: none"> <li>● Defining concepts: rain, cloud, drops, Stratus, Cirrus, Cumulus, Nimbus</li> <li>● Enhancing understanding of rain's function for the environment and the planet</li> <li>● Understanding the relationship between the level of pollution and the type of rain</li> <li>● Perceiving cause-and-effect relationships</li> <li>● Developing the ability to formulate hypotheses</li> <li>● Perfecting the tweezers grip</li> </ul> |
| <b>2</b> | <p><b>Vocabulary - keywords</b></p> <p>rain, cloud, stratus, cirrus, cumulus, nimbus, droplet, air pollution, dirty rain, acid rain</p>   |
| <b>3</b> | <p><b>Sustainable abilities developed</b></p> <ul style="list-style-type: none"> <li>● System thinking competency</li> <li>● Anticipatory competency</li> <li>● Collaboration competency</li> </ul>   |
| <b>4</b> | <p><b>Pillars of sustainability included</b></p> <ul style="list-style-type: none"> <li>● economical</li> <li>● ecological</li> <li>● social</li> </ul>   |
| <b>5</b> | <p><b>STEAM domains</b></p> <p>S, A, T</p>  |



## 6 Teaching methodologies/activity outline

### Introduction

Classes are best conducted in spring. Both a nice and clear sky and storm clouds can bring interesting observation results.

#### 1. Observing clouds in the preschool garden

Children go out to the preschool garden - they spread out blankets and pillows, and conduct a thorough observation of the clouds. Each child is invited to choose the cloud they like best and describe it.

Then the children go back to the preschool, are divided into groups. The teacher gives them pictures of different types of clouds and asks them to recognize the type. Children recognize and define the clouds: Stratus, Cirrus, Cumulus, Nimbus.

Then together they discuss some examples of weather symbols (please see the attachment at the end of scenario)

- What does this symbol mean?
- What happens when we see a certain cloud in the sky?
- How do animals react when rain is approaching?
- How do people react to rainy weather?
- What emotions does rain evoke in you?

#### 2. Conducting an experiment „Rainy clouds”

Children in the same groups come to their tables. They unfold the cling film. The teacher shows and explains the use of particular aids (tweezers and a syringe). Then the children perform the experiment according to the teacher's verbal instructions. The teacher asks questions:

- What does foam remind you of?
- Why do you think the dye penetrates the foam?
- After the children's answers and explanation of the process, the teacher asks the children to use yellow dye. Asking questions:
- What do you think yellow rain means?
- What happens to the environment when such rain occurs?

#### 3. Artistic expression

Teacher prepares unconventional materials, i.e. feathers, mouline, yarn, play dough, beads, chalk pastels. The teacher asks the children to picture the positive or negative effects of rain. Children have freedom in the form and presentation of the work.

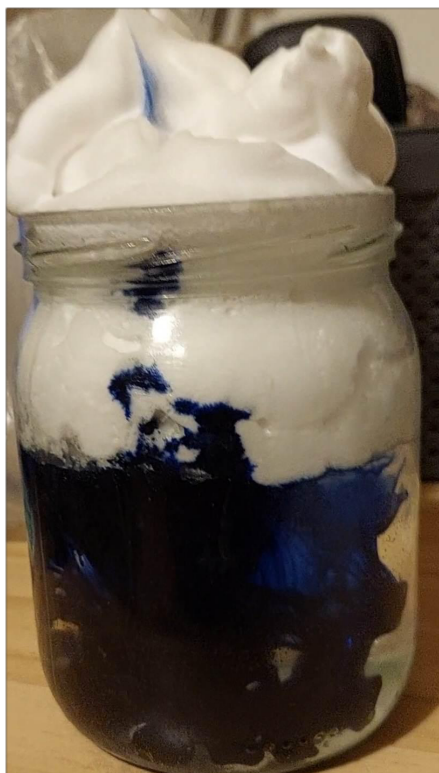
#### 4. Creating exhibition of children's works.



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| <b>7</b>  | <h2>Expected learning outcomes</h2> <p><b>The child will be able to:</b></p> <ul style="list-style-type: none"> <li>● Explain the role of rain for the environment and the planet</li> <li>● Observe, analyze and draw conclusions from the conducted experiment</li> <li>● Improve pincer grip</li> <li>● Use various art materials when creating works.</li> </ul> |
| <b>8</b>  | <h2>Assessment</h2> <p>Problem questions:</p> <ul style="list-style-type: none"> <li>● What are the names of the clouds you met?</li> <li>● What is the role of rain for the environment?</li> <li>● How does pollution affect the type of rain?</li> </ul>  |
| <b>9</b>  | <h2>Equipment and materials to be used in learning unit (tools, ingredients etc)</h2> <p>light tables to be moved outside together with cling film<br/>jars full of water, shaving foam, blue and yellow food coloring or ink, pipette or syringe.<br/>materials, i.e. feathers, floss, yarn, play dough, beads, chalk pastels</p>                                   |
| <b>10</b> | <h2>Kind of setting - lab, kitchen, outdoor etc.</h2> <p>Classroom and preschool garden</p>  |
| <b>11</b> | <h2>References - source:</h2> <p>Experiment with a rainy cloud:<br/><a href="#">Eksperyment z chmurą deszczową   Sprytna nauka</a></p>   |
| <b>12</b> | <h2>Autorzy</h2> <p>Aleksandra Maciejczyk, Dominika Drużkowska, Gabriela Mach</p>  |
| <b>13</b> | <h2>Mentor</h2> <p>Martyna Szczotka</p>  |



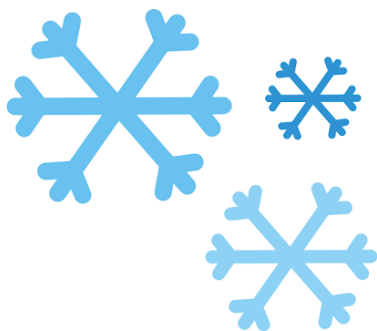
## Doświadczenie: „Deszczowe chmury”



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## Weather symbols/ emoticons



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