Why does the plane fly? - constructing an aircraft

1	**Overall aims:** • Developing interests in the surrounding world • Enriching knowledge about means of air transport • Making a paper model of an airplane • Developing hand-eye coordination
2	**Vocabulary - keywords** Plane, aircraft, wings
3	**Sustainable abilities developed** • System thinking competency • Integrated problem solving competency
4	**Pillars of sustainability included** • economical • socio-cultural
5	**STEAM domains** S, E, T,

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6 Teaching methodologies/activity outline

Introduction

Conversation:

- What examples of flying machines do you know? (the teacher shows illustrations, eg. airplanes, helicopters, gliders, hang-gliders, and balloons).
- Have you ever flown by plane? What kind of plane was that? How did you like the plane journey?
- What are airplanes used for? What types of planes are there? (passenger, transport, sports, military)
- What are the most important parts of the plane called? (wings, propellers, pilot's cabin, rudders, landing gear)

Main part

Problem: Why do you think planes fly?

The teacher shows the children how to make an airplane out of a piece of paper. It demonstrates planes that were made of A4 and A5 sheets. He asks the children the question: which plane is going to go farther on? What determines the distance the plane will fly? (wing size, aircraft speed)

Children give answers - they pose hypotheses.

Children assemble their planes according to the instructions and check the previously set hypotheses.

https://www.youtube.com/watch?v=7KPaxKUDj6I (instruction and explanation why the plane flies)

https://drive.google.com/file/d/1dlcK7GAAfmECQqm3pvAZNtU7h08BhKas/view (instruction)

The teacher suggests the competition: Which plane will fly the farthest? Children line up in a row and let go of their planes one by one. Which aircraft will fly the longest? At the signal, the children in line let their planes go and we watch which one has flown the longest.

Summary

Together with the children, we wonder why some models of the plane flew a greater distance (streamlined shape of the plane) and others stayed in the air for a long time (the size of the wings)?

7 Expected learning outcomes

The child will be able to:

- name concepts related to aviation and basic elements of the aircraft
- make a model of an airplane from paper
- explain why a paper plane flies

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	• describe which shape makes the plane go on farther
8	**Assessment** The child finishes the sentences: Planes serve to…. The plane consists of ... The plane continues to fly when… ..
9	**Equipment and materials to be used in learning unit (tools, ingredients etc)** Illustrations of various types of airplanes and aircraft, A4 and A5 sheets of paper, instructions for assembling the plane
10	**Kind of setting - lab, kitchen, outdoor etc.** Outdoor or classroom
11	**References - source:** https://issuu.com/muzeum_wojska_w_bialymstoku/docs/samoloty_loty https://wklasie.uniwersytetdzieci.pl/scenariusz/dlaczego-samolot-lata

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