

7.8 Project: Design a rocket to transport a payload




Aim

You need to design a rocket to transport a payload from one place to another.

Task Criteria

1. The rocket can be powered by air or water. It can travel vertically or horizontally safely.
2. The payload needs to be attached to the rocket and not be damaged in transit. It must weigh no less than 30grams.
3. The distance and path travelled is optional but the start and finish must be determined before the flight and be able to be repeated.

Rocket examples:

-  balloon rocket car or boat
-  powered fan air rocket car or boat
-  water bottle rocket

Issues to Consider

Safety

- Work in small groups, you can have a group effort.
- Equipment, materials and devices supplied by students must be checked and be determined low risk.
- Teacher is familiar with this form of propulsion.
- Chemical engines using explosive powders are not allowed.
- Launching to be done under strict supervision, keeping others well back.

Report

In your report, you must show:

- Drawings of Design and modifications
- Explanation of method of propulsion with diagrams
- Equipment used
- Safety Rules used.
- Test Results and problems encountered.
- Launch Day Results (rocket weight, payload weight, height, flight path etc.)
- Reflections:
 - o Was it successful?
 - o What issues did you encounter?
 - o How did you overcome some of these and further improvements that can be made.