

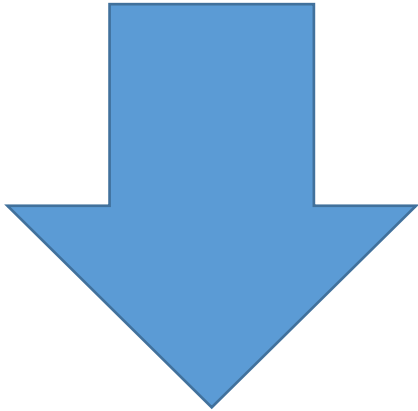
Relationship between the angle of
propellers and the falling objects.

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Introduction and Purpose

Propellers are used in many ways.

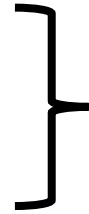


**Find a propeller in accord with a use
by dropping the object.**

Method

Materials

- card board
- packing tape
- oily clay

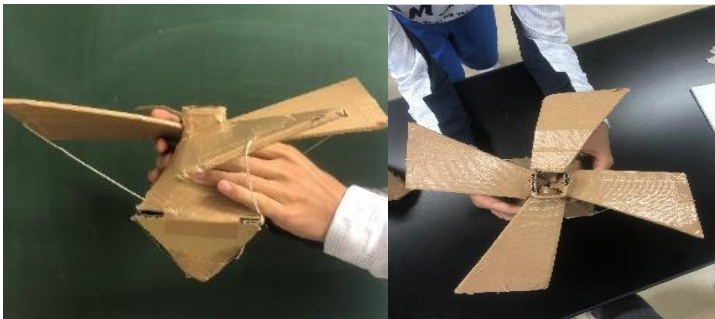


Cheap and light

 Use as weights

Method

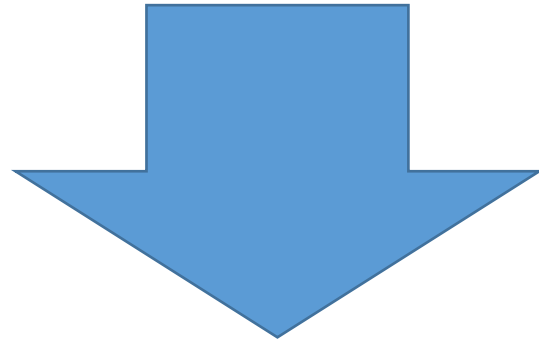
- Make the device of the regular octahedron .
- Fixed four pieces of wings (propeller) to the device by 15° , 30° , 45° , (60°) , (75°) .
- We observed dropping time and the number of spin.



*Picture of device

Experiments 1

Drop the devices(only 15,30,45) without weight.



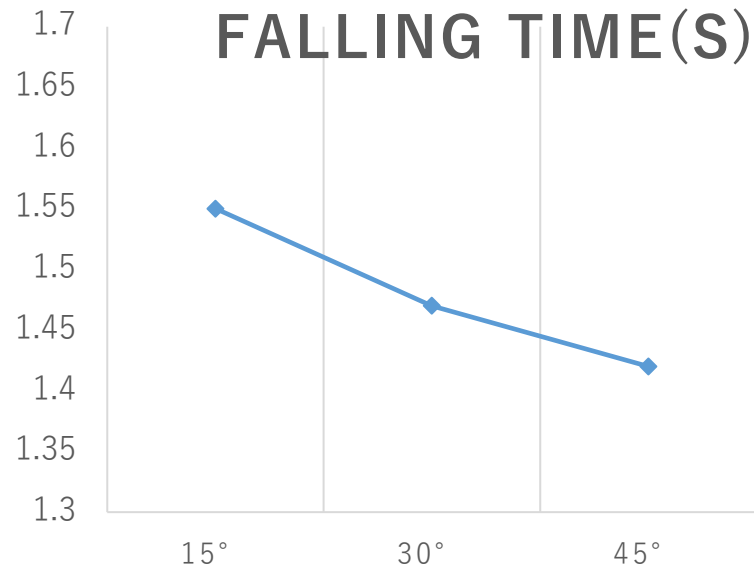
Result; 30° and 45° devices could not keep balance.

We put a weight(250g) inside the devices.

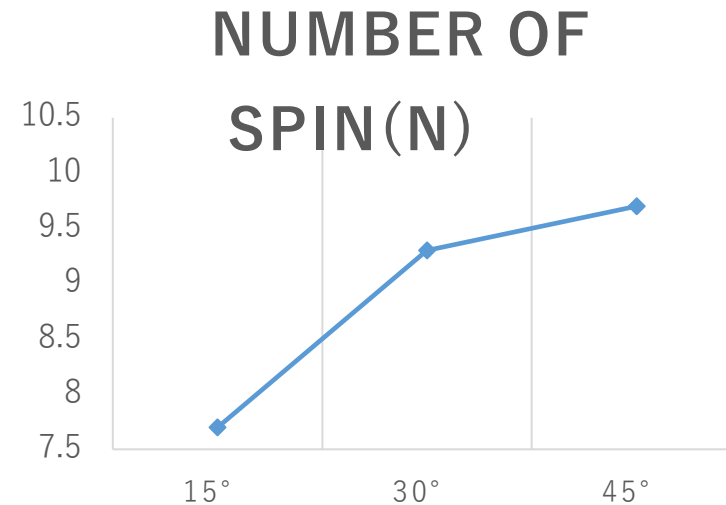
Experiment 2

Drop the devices with weight.

Result;



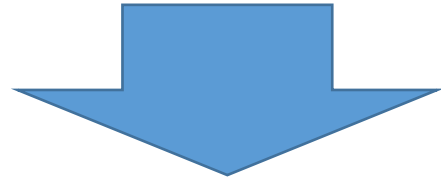
As propellers angle increases, average falling time decreases



As propellers angle increases, the average number of spin increases.

Discussion/Conclusion

- We consider that device with small wing angle receive more air resistance than big angle one.
- Propellers angle increases the air resistance from below is most likely to change to rotational force.



Small angle device is good for dropping the device stably and big angle device is good for a situation that need a lot of rotation.

Future work

- In the future, we will research the condition of falling the device when propellers angle is smaller than 15° and bigger than 45° .
- We researched the falling device's speed.



So next time, we will be focused on the propellers speed of rotations.

- We will research why the higher angle device was less stability.

References

<https://core.ac.uk/download/pdf/71914317.pdf>