

Whirlybird from Paper

An engineering design challenge integrating aerodynamics

Materials Needed

Template of whirlybird, scissors, pencil, ruler, small paperclips, other lightweight materials

Procedure

Use the instructions provided (Teacher: see Resources) to construct a standard whirlybird. Conduct simple experiments with different variables (e.g., add small paperclips, toothpicks) to observe and record how its flight changes.

Teacher Notes

The teacher will determine the design process for the class to use. Here is an example process.

Engineering Design Process

1. consider the problem
2. follow the constraints
3. sketch out some ideas, draw a design
4. construct a prototype
5. test
6. redesign
7. test
8. review steps 1 & 2 to make sure your prototype addresses the problem and meets constraints
9. repeat steps 3-7 as needed, and time permits
10. communicate results to group

Resources

Check out the following websites for instructions; if you search “whirlybird activity” you’ll find others, too. Of course, you can design your own template, or have students design one.

<https://www.scientificamerican.com/article/make-a-whirlybird-from-paper/>

http://bays3rdgrade.weebly.com/uploads/4/2/5/4/42542857/foss_m_m_twirly_bird_2.3.pdf