



**Prize Winner**

# **Models & Inventions**

## **Year 5-6**

**Anya Chawla**  
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**Ruby Billington**

**St Andrew's School**



Title: The Evolution of Dragonflies

Students: Ruby Billington, Anya Chawla, Alexander Smith

ID: 0611-077

The scientific principle we explored through our model is evolutionary biology by studying the evolution of dragonflies. In particular, we looked at the discoveries of the past and how things evolved into the present state. We uncovered how to use past and present information to predict what may happen in the future. We also learnt what factors, natural or manmade, can impact evolution of any species.

There are 3 sections to our model: past, present and future. Each section was constructed by different materials. We needed a sturdy but light base that we could rotate so that all sections could be viewed from one location. We made this out of plywood. Where possible we constructed with cardboard, clay, papermache and Styrofoam to keep our model as light as possible. Our parents helped us obtain these materials and in the use of any objects that were sharp or required heating.

Our original plan was to carry out a scientific enquiry however we realised that our topic was not an experiment but a display of a principle; hence we had to adapt our information to a visual display format rather than a written format.

Operating instructions:

1. To view each section, rotate the model by hand.
2. The "Past" and "Present" sections are visual displays only.
3. The "Future" section has red push buttons that allows the viewer to interact with the model.

# RISK ASSESSMENT FORM

## Models & Inventions

This must be included with your report, log book or entry

NAME: Ruby Billington, Anya Chawla, Alexander Smith ID: 0611-077

SCHOOL: St Andrews School

Activity: Give a brief outline of what you are planning to do.

We are planning to build a model which demonstrates the evolution of the dragonfly, including the past, present and the future aspects of evolution. We will use different materials and mediums to demonstrate the important aspects of the dragonfly and its evolution.

**Are there possible risks? Consider the following:**

- Chemical Risks: are you using chemicals? If so, check with your teacher that any chemicals to be used are on the approved list for schools. Check the safety requirements for their use, such as eye protection and eyewash facilities, availability of running water, use of gloves, a well-ventilated area or fume cupboard.
- Thermal Risks: are you heating things? Could you be burnt?
- Biological Risks: are you working with micro-organisms such as mould and bacteria?
- Sharps Risks: are you cutting things, and is there a risk of injury from sharp objects?
- Electrical Risks: are you using mains (240 volt) electricity? How will you make sure that this is safe? Could you use a battery instead?
- Radiation Risks: does your entry use potentially harmful radiation such as UV or lasers?
- Other hazards.

Also, if you are using other people as subjects in an investigation you must get them to sign a note consenting to be part of your experiment.

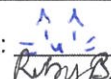
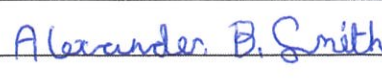

| Risks                       | How I will control / manage the risk  |
|-----------------------------|---|
| Sharps Risk<br>Thermal Risk | We will use a safe, sturdy base to place the items to be cut and shaped. We will use appropriate protective gear (such as gloves, goggles) and equipment (e.g. scissors, jigsaw, hot glue gun) to cut the plywood base, cardboard, styrofoam, wires etc. We will ask for help from our parents where we cannot safely perform the task. |

(Attach another sheet if needed.)


Risk Assessment indicates that this activity can be safely carried out

RISK ASSESSMENT COMPLETED BY (student name(s)): \_\_\_\_\_

Ruby Billington, Anya Chawla, Alexander Smith

SIGNATURE(S):   

by ticking this box, I / we state that my / our project adheres to the listed criteria for this Category.

TEACHER'S NAME: Julie Ponting SIGNATURE: 

DATE: 16/08/21